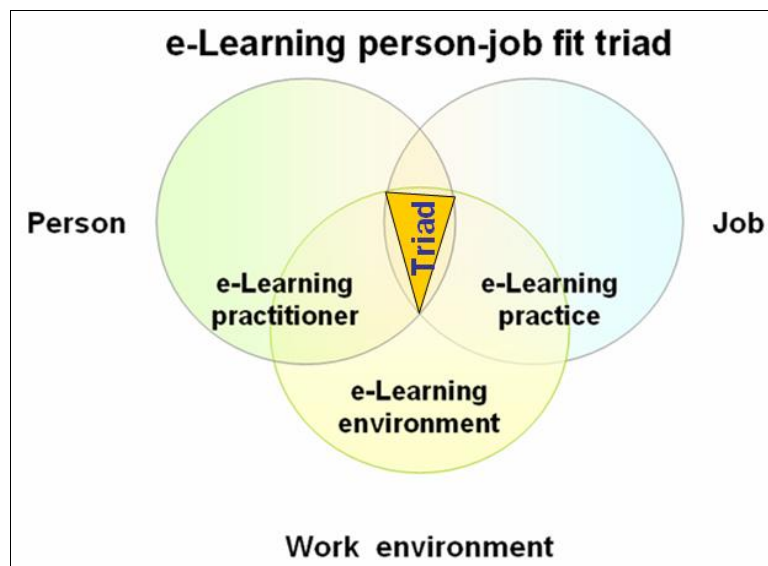


Chapter 2: Literature Study

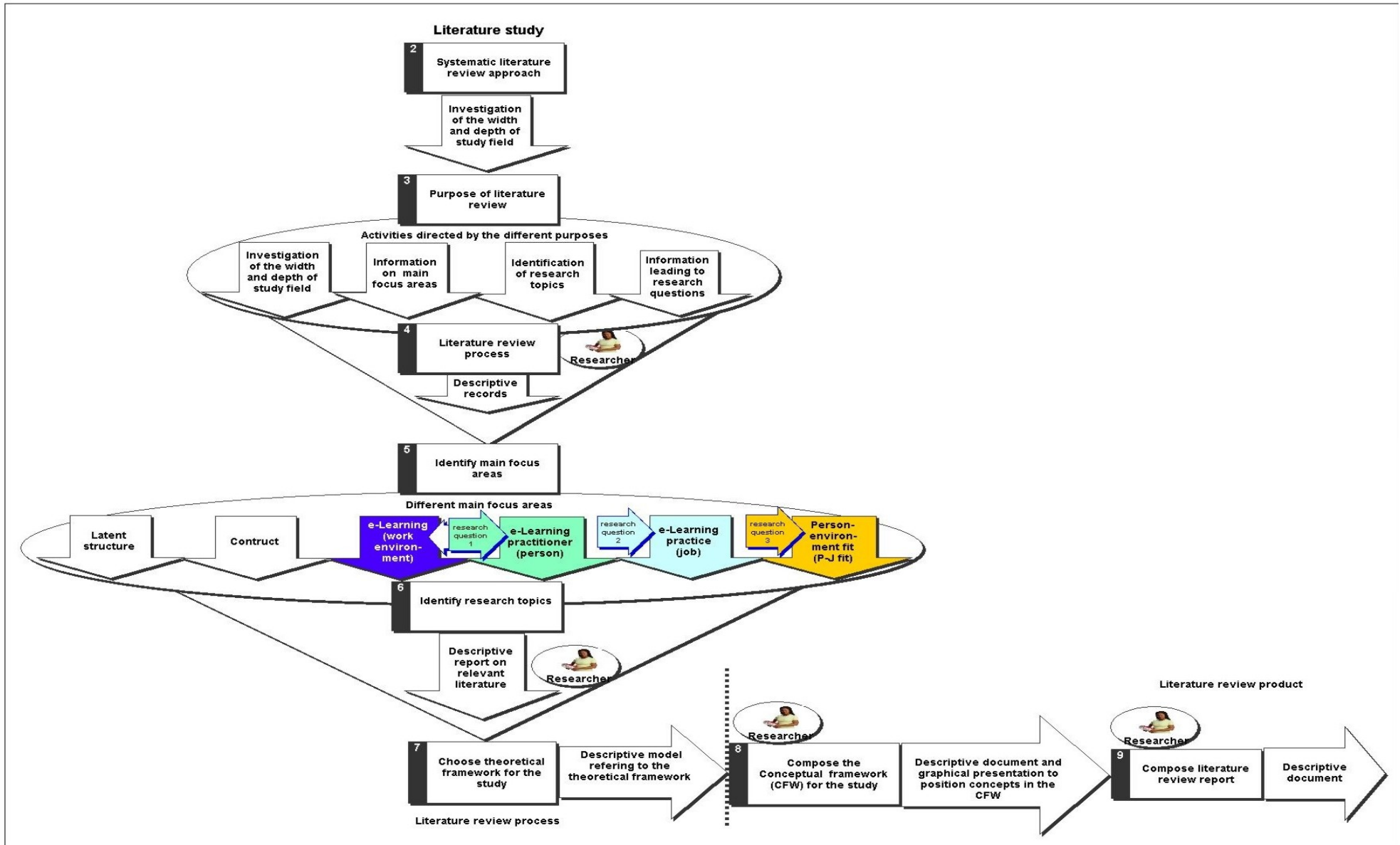
In Chapter 1 the research problem and questions were stated, and the research study outlined. The study reports on efforts to develop a classification scheme for the e-learning practitioner construct, and explore the interaction between the different building blocks of this construct. In this chapter a systematic literature review approach attempts to review the literature relevant to the study of the **e-learning person-job (P-J) fit triad** in the higher education e-learning environment. Relevant building blocks were identified as the e-learning practitioner, e-learning practice and the e-learning work environment. Each of these building blocks is discussed in separate sections of this chapter, following similar **layout structures** for each section in terms of concept clarification, issues related to the particular topic, research trends, and emerging issues and challenges. A number of activities aimed at specific literature review purposes (section 2.3) are followed by a formalised literature review process (section 2.4) to investigate the study field and six main focus areas (section 2.5). Guided by the three research subquestions the literature review concentrates on existing research in terms of the e-learning environment (**work environment**; section 2.6.3) for the e-learning practitioner (**person**; section 2.6.5) practising (**job**; section 2.6.4) in the sphere of higher education. The section on **person-job fit** (section 2.6.6) investigates the complexity of the way in which the e-learning practitioner and e-learning practices fit together in terms of 'goodness of fit' in the ever-changing e-learning work environment. Figure 2.1 is a graphical presentation of the e-learning P-J fit triad.

Figure 2.1: e-Learning person-job fit triad



The chapter continues with a description of the dynamic interactionist model of the e-learning practitioner system. This model is based on an eclectic application of theoretical principles from systems theory, P-J fit theory and interactionist theory, and is grounded in the conceptual framework for this study. The conceptual framework sets the stage for putting theory into practice as described in Chapter 3. Figure 2.2 is a graphical representation of the structural layout of Chapter 2 and provides a bird's eye view on the process and product of the literature review.

Figure 2.2: Structural layout of Chapter 2



2.1 Introduction

Disappointment and disillusionment about the inability of technology to deliver envisaged dividends has led to some introspection on what has happened in this regard (see Zemsky & Massy, 2004 and commentary by Twigg, 2004). Contrary to expectations about learning as a given outcome after the implementation of technology was the realisation that technology on its own cannot deliver the necessary results (Kruse, 2002). Unfortunately, technology, and not the human factor, has been rated most important and therefore realisation that this is a false assumption has spurred new approaches (Beetham, 2004b). Current interest in the e-learning domain is shifting away from emphasis on technology towards human aspects and the social nature of learning (Beetham, 2004b). As a result, social software, communication tools and online communication spanning time and space are becoming more important in the e-learning environment (Beetham, 2004b; Shin, 2004). For this reason this literature review will include some of the existing conceptual **literature on the (1) e-learning work environment** and the issues involved in the application of new teaching and learning approaches in this environment.

Efforts by researchers in the United Kingdom, Europe, Australia and New Zealand to enhance the existing body of knowledge in the field of e-learning practice have not only triggered interest from the scientific research community, but also inspired e-learning practitioner communities to participate in practice research (Browne & Jenkins, 2003; JISC, 2004a; Beetham, 2004b; STEP, 2005). The focus has shifted from *technology and what technology can do for you, to me and what I can do with technology to enhance teaching and learning*. The development of a number of new practice models is the result of **new trends in e-learning practice** and I will focus on the literature pertaining to these trends and the resulting **changes** in the characteristics of the **(2) e-learning practitioner's job**.

Research studies on e-learning report on learner aspects such as the learner's perceptions of e-learning, learner needs in the online environment and diversity in learning styles (Brennan, 2003b; Pebble, Hargraves, Leach, Naidoo, Suddaby & Zepke, 2005). In contrast, I found fewer studies available on teacher aspects such as the teaching styles of the online teacher, changing roles, new competencies and skills needed for the new e-learning environment, new communication strategies and new pedagogical/androgogical/heutagogical approaches to suit the online environment. Person attributes needed to cope with these changes were only touched on in the literature (Fuller, Norby, Pearce & Strand, 2000).

Despite the change in focus to a more humanistic approach, the literature review revealed that very little empirical research is available on the subject of the e-learning practitioner as a person in a changing world of work (Kearsley, 1998). The renewed emphasis on human beings as part of the

online teaching and learning process assumes that e-learning practitioners are important role-players in the e-learning environment.

However, one the most important features of individuals in the work environment, namely their person attributes, is not illuminated by research initiatives. Although some authors (Kearsley, 1998; Gunn, 2001; Palloff & Pratt, 2001b; Salmon, 2003) identify some important person attributes, a dearth of empirical research on this subject is evident from the literature. A scan of the literature revealed only one study on profiling the online teacher using the Myers Briggs inventory (Fuller *et al.*, 2000) and one other study focusing on specific personality characteristics, namely cognitive playfulness, innovativeness and belief in essentialness (Dunn, 2004). For this reason a literature review on the **(3) characteristics of the e-learning practitioner also included broad topics such as personality research in the workplace.**

Research on the use of staff development programmes to promote effective teaching are prominent in the literature (Sparks & Loucks-Horsley, 1998; Bennett, Priest & Macpherson, 1999; Hyde, 2002; Oliver & Dempster, 2002) and it is repeatedly emphasised that the e-learning practitioner needs to be empowered to cope with work demands. The implication of this is a learner role for the practitioner. However, in spite of a vast number of research studies done on the importance of recognising diverse learning styles in the teaching and learning process (Sparks & Loucks-Horsley, 1998; Fuller, *et al.*, 2000; Oliver, Sharpe, Duggleby, Jennings & Kay, 2004), no evidence could be found for transfer of knowledge to the domain of the e-learning practitioner acting as learner. Covert learner preferences and behavioural styles need to be uncovered before teachers will be able to capitalise on learners' strengths and preferences. Surely this is also applicable for e-learning practitioners acting as learners? The literature review done for this study revealed **no reference to studies done** explicitly on the preferences of teachers, or for that matter e-learning practitioners as learners. The **lack** of studies on the learning styles or work behavioural styles of these "learners" as part of a holistic approach to professional development or as part of self-awareness programmes for e-learning practitioners is evident from the literature review.

Professional development and staff training is a major issue in the e-learning work environment (Attwell, 2004:61); however, one of the most important aspects in the striving to empower practitioners and to enhance sustainable e-learning environments, namely the preferences and work behavioural styles of the e-learning practitioners who are the subjects of the development and training initiatives, is not mentioned in staff development and training programmes. Furthermore, criteria for selecting or recruiting e-learning practitioners are, with the exception of Salmon (2003), not mentioned in the literature. No reference to P-J fit in terms of the e-learning practitioner and the e-learning job could be found.

Implications for this study

A changing teaching and learning environment focusing more on the social side of e-learning certainly implies an in-depth focus on the person practising the job: not only in terms of the changing roles, competencies and skills needed for the job, but also, most importantly, in terms of the work behavioural style of the person adapting to an ill-defined job that is sometimes completely new to them. Therefore another important aspect, the **(4) relationship between the e-learning practitioner and the e-learning practice** and how the **person and the job fit together in the higher education work environment**, directed the focus of the literature review towards topics in the person-environment fit domain, aiming at a critical analysis of the existing research in this field.

2.2 Literature review approach

In an article on the use of the research process to improve professional practice, Hemsley-Brown and Sharp (2003:499) describe the systematic approach to the literature review as “attempts to identify the best available evidence to answer specific questions”. Their suggested systematic approach to a literature review was applicable in this study and included the use of a **funnel** approach as a narrowing technique. The funnel is a metaphor for an approach that is used to **filter** relevant research literature aimed at addressing the research questions (Munro, 2004) and to **trigger, generate** and **refine** further research ideas. The contextualisation of the research forms the top part of the funnel. In narrowing the context by defining the **field** of the research, the **main focus areas** and the specific **research aspect/topic**, the **research problem** can be defined (Munro, 2004). These activities not only culminate in the substantiation of the research choices of the topics, conceptual framework and methodology, but also provide a sound theoretical foundation for the study. The literature review report is the product of the literature review process.

2.3 Literature review purpose and activities

Creswell (1994:20) refers to a number of purposes accomplished by the literature in a research study as: (1) “It reports results from other related studies”; (2) “[I]t relates the study to the larger ongoing dialogue in the literature about a topic, filling gaps and extending prior studies”; (3) “[i]t provides a framework for establishing the importance of the study”; and (4) “provides a benchmark for comparing study results with other findings.” In addition to these, the literature review in this study added another fourfold purpose, namely to scan the available literature resources to investigate the width and depth of the study **field**, to determine the **main focus areas** and research **topics** for the study and to review and analyse the literature in terms of the research **questions**. Activities involved in attaining these purposes are described in the following paragraphs, and will become clearer through the discussions that follow.

2.3.1 Investigation of the width and depth of the study field

The first literature review activity aimed at attaining the first purpose is to scan the available literature resources to investigate the width and depth of e-learning in the higher education field. The historical course of this study, already mentioned in Chapter 1 and Appendix A1, involved a broad departure and four turning points. An extensive literature review was done to investigate the width and depth of the study field pertaining to the e-learning practitioner in higher education, for example the e-learning work environment, the e-learning practice, the organisational environment of e-learning practice, the e-learning practitioner and support systems for the e-learning practitioner, including those of electronic support and staff development and training support.

Studying the literature resources available in the study field elicited a number of questions:

- What is the nature of e-learning practitioners?
- What is the nature of their job environments?
- What is the influence of the organisational infrastructure on e-learning practitioners and their practice?
- How can e-learning practitioners be supported in the work environment to complement both the job and the person?
- What are the key factors that come into play in the triad of person, job and environment?
- How can staff development and training influence the goodness of fit between the person and the job?
- Why are the majority of staff training programmes planned without taking the person attributes of the trainees in account?

These questions were thought provoking and stimulating, but the focus areas were too broad for this particular study and had to be narrowed down using the **funnel approach** in order to define the boundaries of the field of research for the main focus areas.

Implications for this study

Available resources were scanned, evaluated for credibility and assessed for inclusion or exclusion before adding them to the electronic database in theme categories. Aspects such as e-learning, e-learning practice, e-learning practitioners, the higher education work environment, organisational infrastructure and support systems for the e-learning practitioner were identified as relevant.

2.3.2 Information on the main focus areas of the study

The second purpose of the literature review is to identify the main focus areas of the study. The repetitive nature of the funnel approach implies a repetition of the funnelling process, which narrowed the focus down to e-learning practitioners practising in the higher education e-learning

context. The issues of how these practitioners are supported by organisational infrastructure, and staff development and training support systems, are on the periphery of the study area and tend to be more relevant for putting theory into practice through practical interventions in the work environment. Therefore a critical analysis of these practical interventions will **not** be included in this study.

Implications for this study

Six main focus areas were identified and relate to the study title, namely (1) latent structure, (2) construct, (3) e-learning in higher education, (4) e-learning practice, (5) the e-learning practitioners, and (6) their relationships in terms of P-J fit in the work environment. Exploring and defining these aspects of the study guided by the research questions provided a framework for the third literature review purpose.

2.3.3 Identify research topics to frame the research problem.

This involved exploring and defining the main focus areas of the study, crystallised in a number of research aspects/topics that framed the research problem.

Implications for this study

In each of the six main focus areas a number of research topics were identified. Topics identified in the first two main focus areas (latent structure and construct) were the clarification of the concepts 'latent structure' and 'construct' and approaches for uncovering the latent structure. Topics addressed in the four other main focus areas were definition and clarification of topic; "relating the study to the larger ongoing dialogue in the literature about the specific topic, filling gaps and extending prior studies" (Creswell, 1994:20); historical aspects relevant to the topic; issues and controversies regarding the topic; global and national research trends and reports from other related studies; policies and related issues; and emerging issues and challenges.

2.3.4 Review and analyse literature resources

The fourth purpose of the literature review is to review and analyse the literature in terms of the research questions. According to Creswell (1994:22), "quantitative studies include a substantial amount of literature to define the research problem and to provide direction for the research questions". Qualitative studies use the literature inductively in an exploratory way to build a picture based on a variety of ideas (Creswell, 1994). Both qualitative and quantitative approaches were used in the mixed methodology design of this study. Theory was used in the beginning of the study (Creswell, 1994) as a framework for inductive and abductive reasoning to position the study.

Implications for this study

Literature resources were selected from a wide range of national and international academic books and journals (both in printed and electronic format), electronic databases, conference proceedings and Internet resources from renowned authors, universities and companies. Using the funnel approach, available resources were filtered into useful entities. These actions are of a repetitive nature and the repetitiveness will depend on the purpose of the specific action. For example, for the purpose of investigating the width and depth of the study field, a broad literature scanning process would be sufficient. For a more detailed investigation of the study focus areas, these activities would be more selective and focused using an in-depth reading approach to identify relevant data sources. Exploring and defining the main focus areas and relevant topics of the study, guided by the research questions, provided a framework for the fourth literature review purpose. The following paragraphs will describe these activities in the literature review process.

2.4 Literature review process

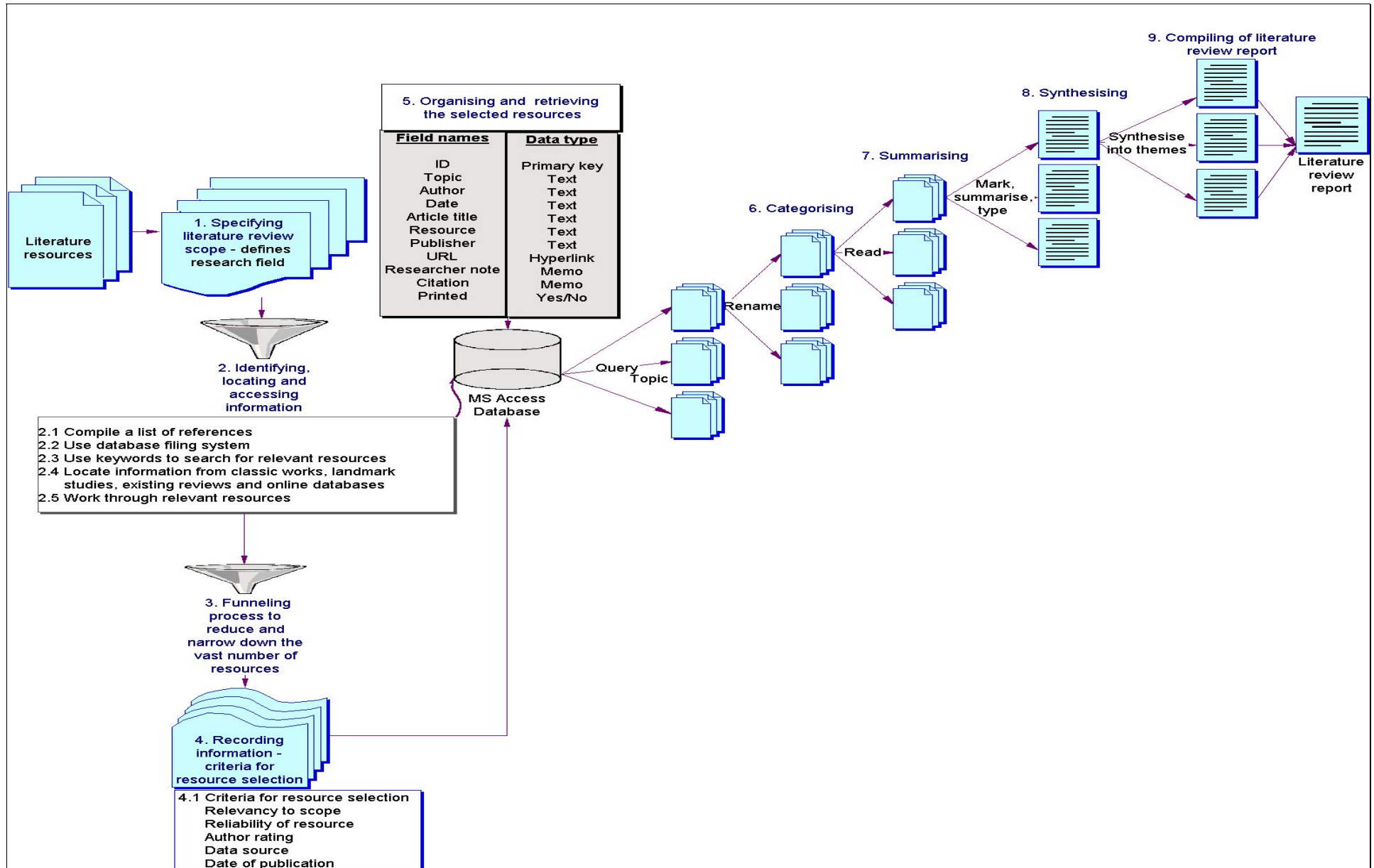
The literature review is both a process and a product (Green & Bowser, 2003). Generally speaking the literature review process aims at finding research evidence to answer research questions and the literature review product aims at the synthesis of the evidence into a benchmark for comparing existing research findings with the findings of this study. The literature review process illustrated in Figure 2.3 includes a number of steps that are not necessarily sequential, but may involve moving backwards and forwards between the steps (Rutledge, DePalma & Cunningham, 2004; Rapple, 2005). The steps involve the following:

- Specifying the literature review scope (#1). It is essential to outline the research field and to define the precise scope into manageable and appropriate main focus areas. For this purpose, e-learning focusing on the e-learning practitioner and e-learning practice in the higher education field were examined.
- Identifying, locating and accessing information (#2) involved searching relevant resources, for example existing literature reviews, bibliographies, printed indices, online databases, classic and landmark studies. A list of resources was compiled using a database index system created in MS Access. The database consisted of a data table and 11 data fields of varying types. Included were fields for data ID, topic, author, date of publication, article title, resource, publisher, URL, researcher notes, citation and printed status. The computerised index system allowed for the tracking of resource details using the topic field to filter specific queries. The database was populated with data retrieved from external databases and resources. Extensive literature searches were conducted using a variety of keywords dictated by the main focus areas. Review and analysis of these resources were **guided** by the main research question: *What is the latent structure of the e-learning practitioner construct?* and the three subquestions: *What is the latent structure in terms of the work*

environment and in terms of person attributes and How do the job and the person characteristics fit together in the structure of the e-learning practitioner construct?”

- A funnelling process (#3) was used to reduce and narrow down the vast number of resources for the main study focus areas, namely latent structure; construct; e-learning, e-learning practitioners, e-learning practice and person-job fit.
- Recording of the relevant information (#4) was guided by a set of assessment criteria for resource selection. The credibility of literature resources was assessed in terms of resource reliability and the rating of the author as an expert in the specific field. Other criteria used to either **include or exclude** studies were based on the scope of the study as well as the source and date of publication.
- Organising and retrieving selected resources were simplified by using the MS Access database (#5). Furthermore, an electronic file and folder structure for the relevant topics was created and the different resource files were sorted and saved in the relevant folders. These files were renamed and printed using the same identifying ID for both the file and the printed copy.
- The printed files were categorised (#6) according to topic and each topic was studied and read as a unit. Relevant information was marked, summarised and typed as word documents.
- Summarising (#7), combining and synthesising (#8) information across different studies into themes (main focus areas) resulted in the identification of research topics, for example trends, issues, research trends and gaps in the literature, recorded in Word documents. These data summaries were used to compile (#9) the literature review report (literature review product). Figure 2.3 illustrates the literature review process applied in this research study.

Figure 2.3: Literature review process



2.5 Main focus areas relevant for this study

The following main focus areas were identified as being relevant for this study. The first main focus area covers the meaning of **latent structure** in terms of clarifying the concept and identifying the different approaches for uncovering latent structure. Reference is also made to the application of classifying systems in expressing latent structure.

The second main focus area covers defining and clarifying '**construct**' as research term.

The third main focus area covers research on **e-learning** and deals with the "what", "where", "who", "how" and "why" questions for clarifying the concept. A historic overview of e-learning development, supported by a snapshot of global research initiatives and policies, contributes to contextualising the current trends and issues in the e-learning field in higher education.

Emerging issues and challenges that were identified from the literature review are change, sustainability, professional development and training and a new appreciation for the human side of e-learning.

Solutions suggested by various authors ranged from skills training for e-learning practitioners to changing organisational strategies, structures and management processes to staff development programmes focusing on more holistic approaches.

The fourth main focus area covers research on **e-learning practice** focusing on understanding the complexities and the intertwined issues and challenges of e-learning practice, personality trait-based interactionist models of job performance, personality-orientated job analysis and models for job redesign.

The fifth main focus area covers research on **e-learning practitioners** focusing on identifying the nature, roles, competencies, skills and attributes of the e-learning practitioner. It reviews research on personality in the work environment with an emphasis on personality traits, assumptions and controversies on personality, occupationally orientated personality theories, attributes in terms of behavioural styles and the assessment of these styles.

The last main focus area covers research on **person-environment (P-E) fit** and **P-J fit theories**. It reviews the research on P-E fit (person-organisation and person-job fit), but no research studies were available on the fit between e-learning practitioners and e-learning jobs in higher education. One research article (Shin, 2004) gave a useful P-E fit model for virtual organisations, which may contribute transferable attributes applicable for higher education organisations.

2.6 Discussion of main focus areas

Discussion of the above-mentioned six main focus areas will follow similar layout structures in terms of concept clarification and the highlighting of burning issues and controversies in the e-learning domain relevant to the understanding of the e-learning practitioner construct. Research gaps in the literature will be pointed out and arguments in favour of possible contributions from this study will be presented.

2.6.1 Latent structure

The first main focus area covers the meaning of **latent structure** using the taxonomic and systems approaches to clarify the concept.

In the domain of psychology, the concept 'latent structure' suggests statistical approaches using taxometric or factor analysis methods and latent structure models to determine the latent or **unobserved structure (organised building blocks)** of a construct. The unobserved structure of a construct can be expressed in the form of a taxonomy or classification scheme (Pulakos, Arad, Donovan & Plamondon, 1997). The systems theory approach suggests "the [latent] or underlying structure providing a view of the interactions between the elements of the system responsible for producing the patterns of behavior" (Bellinger, 2004), whilst the interpretive approach adds another dimension by suggesting that "many possible realities, each of which is relative to a specific context or frame of reference, may be produced by the latent structure of a construct" (Chiang, 1998). Following suggestions by these approaches may **lead us to wonder about the patterns of behaviour that might be produced by the e-learning practitioner system to reveal its latent structure, providing various possible realities of the e-learning practitioner construct.**

Before we can address questions about the latent structure of the e-learning practitioner construct, clarification of possible approaches is necessary. The next paragraphs will elaborate on aspects such as the usefulness and functions of taxonomies and the use of systems theory to understand the meaning of latent structure.

2.6.1.1 Latent structure – the taxonomic approach

According to TechTarget Network (2004) "taxonomy (from the Greek taxis meaning arrangement or division and nomos meaning law) is the science of classification according to a pre-determined system". The concept is further explained by adding that classification systems provide "conceptual frameworks for discussion, analysis or information retrieval" (TechTarget Network, 2004) and function like roadmaps for information and for a particular purpose. Some authors define a taxonomy as a theoretical study of classification or a scheme that partitions a body of knowledge and defines the relationships between the pieces (Simpson 1945; ANSI, 1986; WEBOL, 1998).

For this reason I have chosen the **DISC taxonomy** as a conceptual framework for classifying, analysing and relating the information pertaining to the characteristics of e-learning practitioners and the e-learning practice (see section 3.8 for a detailed description of the DISC profiling instruments).

Therefore, in my opinion, because of their **classification strengths**, taxonomies are most **useful** in the **study of the latent structure of constructs** (Ruscio & Ruscio, 2002). Those that are simple, easy to remember and easy to use (TechTarget Network, 2004) in particular contribute to elegant frameworks for analysis and discussion.

The development of taxonomies with the **aim of classifying and understanding** is traditionally done in the domains of the biological sciences. According to TechTarget Network (2004), Carl Linnaeus's classification for the plant and animal kingdom is one of the best-known taxonomies and is still widely used. Recent focuses for taxonomy development are in the fields of business intelligence and knowledge management (Cody *et al.*, 2002; Spangler, & Kreulen 2002; Pohs & McCarrick, 2003), technical industry (Drejer & Leiponen, n.d.), information sciences (Conway & Sligar, 2002), human intermediation (Miwa, 2000) and website and web portal design (Adams, 2000; Morrison, 2003). Various applications in the field of education include, for example, instructional design (Bloom, Englehart, Furst, Hill & Krathwohl, 1956; Nelson, 1998), learning objects (Wiley, 2002), curriculum development (Darzentas, Nicolle, Romero, Strobbe & Velasco, 2003), electronic portfolios (AAHE, n.d.), instructional strategies (Forger, Franklin & Perez-Franco, 1999; Forger, Franklin & Knight, 2002) and asynchronous learning environments (Blignaut & Trollip, 2003). Although the forms of taxonomic structures are rooted in the works of Aristotle and Darwin (Conway & Sligar, 2002), the meaning of the term 'taxonomy' has been expanded especially in the digital environment to create metadata, facilitate information retrieval and provide schemes for web page layout.

Taxonomy development has historically accompanied numerous classification schemes in the field of psychology, for example the well-known personality trait factor/Big Five Factor theories, the Myers Briggs Type Inventory and Kolb's learning style typology (Pervin & John, 1997; Tett & Burnett, 2003).

Principles from the trait factor and occupational-orientated personality theories are used in a variety of personality-related taxonomies and numerous research studies use the Big Five taxonomy as a framework for conducting construct validity studies on various personality factors (Tett & Burnett, 2003).

Well-known taxonomies, such as the Big Five-Factor Model (Pervin & John, 1997), Holland's RIASEC Model, Chatman and Caldwell's taxonomy of eight organisational cultures (Tett & Burnett, 2003), and typologies such as Myers Briggs (Pervin & John, 1997) and the DISC behavioural style indicator (Thomas DISC, n.d.), are used to describe and classify different aspects of personality. Although Holland's Theory of Vocational Choice (Holland, 1992) makes a connection between six personality types and corresponding work environments, the researcher could **not find any formal description of an existing e-learning practitioner characteristic taxonomy**. Therefore, neither Holland's typology nor the well-known and frequently utilised Big Five taxonomy for personality assessment were selected for this study. The main reason behind the decision in favour of the DISC personality assessment instruments lies in the strength of this system to combine the personal profile analysis with a human job analysis to determine goodness of fit between the person and the specific job. Furthermore, by using an eclectic qualitative approach, a variety of descriptive characteristics regarding the person as well as the job can be analysed to enrich insight into the latent structure of the subjects under investigation.

Taxometric research on the other hand is prominent in quantitative approaches and Meehl (1999) explains the term '**taxonomic**' as referring to the theory or method of classification, whilst '**taxometric theory**' may be thought of as a set of equations relating a set of latent parameters to a set of manifest parameters. He continues by saying that **taxometrics** is a **statistical procedure** for determining whether relationships among observables reflect the existence of a latent taxon (type, species, category and disease entity) (Meehl, 1999:165). An essential feature is multiple consistency tests that will not be satisfied if the latent structure is not taxonic. Common misconceptions highlighted by Meehl (1999) are that "the taxon must be "sharply" distinguished, quantitative indicators must be bimodal and that adopting a taxon is a mere matter of convention or preference" (Meehl, 1999:165).

Methods to detect latent taxa may include cluster, inverse or latent class analysis and the taxometric method (Meehl, 1999:169). Taxometrics, like factor analysis using procedures such as MAMBAC and MAXCOV, are important tools in construct validation research (Meehl, 1973; 1995; 2001; Meehl & Yonce, 1996). The absolute minimum sample size for conducting a taxometric analysis is around 200 with valid indicators, but sample sizes of 300 or more are preferred (Meehl, 1992:161).

A question that often emerges in discussions about taxometrics research is: "Who cares?" What does it matter whether a trait or disorder reflects a distinction in kind or a difference in degree? Beauchaine (2003:504) answers these questions by saying "identifying taxa enables us to establish nonarbitrary cut-offs that distinguish between those with and without a trait". Although the

strength of taxometric approaches lies in their application in the field of construct validity, the static nature of these approaches has a **limiting effect** on usability for this study.

2.6.1.2 Latent structure – systems thinking approach

The systems thinking approaches, adding a **dynamic feature to the static classification** approaches used by taxometrics, suggest that **underlying structure** provides a view of the **interactions** between the elements of the system (Bellinger, 2004). Understanding these interactions and relationships contributes to our understanding of the systemic whole.

Implications for this study

Systems thinking principles are **useful** for analysing the underlying structures of the personal and job profiles, as well as determining goodness of fit patterns between the person and the job to contribute to our understanding of the e-learning practitioner system.

The human individual system is composed of interpersonal content variables (influences), including age, gender, self-concept, beliefs, personality, values and skills. Patton and McMahon (1999:10) and Bergh and Theron (2001:310) define the study of personology as the study of consistent and repetitive behavioural patterns functioning in an environmental context. Personology and the study of personality are relevant for this study in terms of personal profiles and person attributes being part of personality.

In applying systems theory to the field of personality, personality can also be seen as a living system contained as interpersonal content or essential element in the individual system. The **structure** of personality refers to the basic building blocks that constitute personality and how they are organised (Bergh & Theron, 2001:321) – in other words, the building blocks in the personality system are related and configured in patterns. A variety of personality theories and taxonomies, for example factor or trait theories, cognitive theories, learning theories and occupational-orientated (P-J fit) theories, provide paradigms for explaining and describing human behaviour using different concepts (e.g. traits, cognitive constructs and behavioural responses) as examples of personality structure. According to Revelle (2002) a number of researchers directed taxonomic work towards “categorizing the infinite ways in which individuals differ in terms of a limited number of latent or unobservable constructs. This is a multi-step, cyclical process of intuition, observation, deduction, induction and verification that has gradually converged on a consensual descriptive organization of broad classes of variables as well as on methods for analyzing them” (Revelle, 2002).

Studying the latent structure of the e-learning practitioner construct involves not only the identification of the characteristics of the different “building blocks” but also revealing the relationship between these concepts. The DISC behavioural style indicator, as a measuring

instrument, provides a taxonomic approach for identifying the characteristics of the e-learning practitioner and the e-learning practice, as well as their interaction, which is responsible for producing specific patterns of behaviour.

Implications for this study

Systems thinking principles derived from the systems theory paradigm are useful in the study of latent structure because they provide a framework for enquiry in the study of the interactions between the characteristics of the e-learning practitioner and the e-learning practice. The e-learning practitioner construct is seen as a living system consisting of two subsystems, namely the e-learning practitioner (person) and the e-learning practice (job) and the interlinking relationship between the two subsystems in the e-learning practitioner system.

If the e-learning practitioner construct is seen as a living system, how should we define the research term '**construct**' in this regard? The second main focus area covers the definition and clarification of this term.

2.6.2 Construct

Conveying an objectivistic approach, Cronbach and Meehl (1955:3) define a construct as some "postulated attribute of people, assumed to be reflected in a test performance"; and a "construct is defined implicitly by a network of associations or propositions in which it occurs. Constructs employed at different stages of research vary in definiteness" (Cronbach & Meehl 1955:20). In a more constructivist approach "constructs" can be defined as "theoretical creations that are based on observations but cannot be observed directly or indirectly" (Babbie, 2005:124). Constructs are not "real" but they are useful in providing the researcher with a **way to organise, communicate about and understand** things that are real. "They help us make predictions about real things" because they have a definitive relationship to things that are real and observable (Babbie, 2005:125). Babbie (2005) continues by defining "the bridge from direct and indirect observables to useful constructs as the process of conceptualization" (Babbie, 2005:125). Conceptual frameworks are frameworks for structuring concepts or constructs in terms of definitions, hypotheses, propositions and so forth. Scientific structures such as typologies, theories and models that have classificatory, heuristic and explanatory functions are examples of conceptual frameworks (Mouton & Marais, 1992:139). Elaboration on the latter will follow in the discussion on the conceptual research framework in the last section of this chapter.

According to Meyen, Aust, Gauch, Hinton, Isaacson, Smith and Tee (2005:4) formulating a systematic approach to e-learning research and the "framing of constructs to guide needed research" are research challenges. We can ask the questions: How should we approach and frame the e-learning practitioner construct? Would it be fair to argue that the research construct should

be viewed as a work in progress and is not intended as an all-inclusive model of the e-learning practitioner system? As already pointed out in the discussion on latent structure, the focus on the latent structure of the e-learning practitioner construct presents a dichotomy in terms of a narrowed focus on latent structure on the one hand, and a variety of possible realities on the other. Guided by the literature review it is possible to set a few parameters on the definition of the construct, which may help us to refine its dimensions. The term 'e-learning practitioner' is not explicitly defined in the literature, and terms such as 'online teacher', 'online facilitator' and 'e-moderator' are used in this regard. For this study the term 'e-learning practitioner' refers to individuals who create, use and maintain e-learning and teaching environments. They are involved in a number of job roles, defined by their job description, which suggest a variety of competencies, skills and person attributes needed to fulfil the various job tasks (Brennan, McFadden & Law, 2001; Adendorff, 2004; Smith, 2005). Therefore for the purpose of this study the e-learning practitioner construct should be viewed as comprising the greater domain of the e-learning work environment, which includes the person doing a job in this environment. Three interdependent dimensions, namely the e-learning work environment, the e-learning practitioner (person) and the e-learning practice (job), provide the primary parameters and frame for this construct. Translating this P-J fit triad into systems thinking means that the two subsystems of e-learning practitioner and e-learning practice, nested in the e-learning work environment, interact as a systemic whole to constitute the e-learning practitioner system.

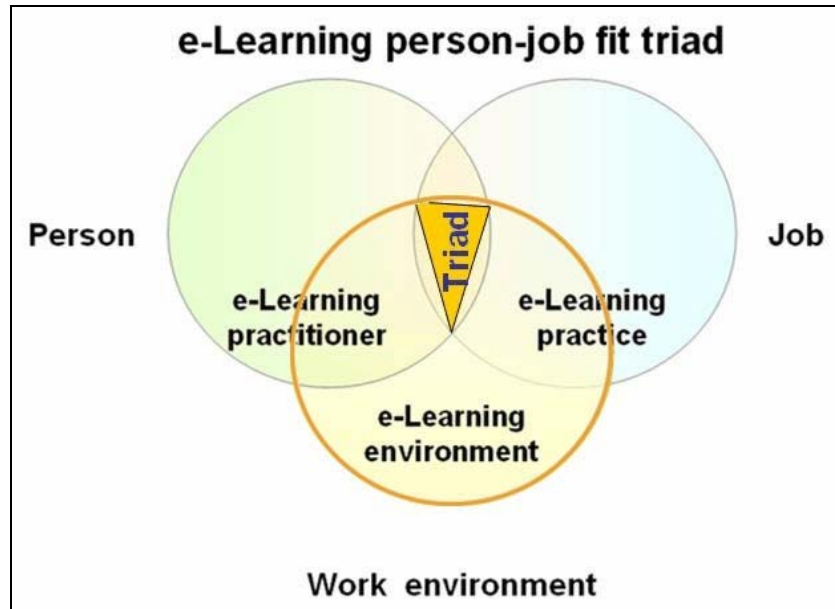
Implications for this study

To contextualise the e-learning practitioner construct, it is essential to take cognisance of the trends, issues and controversies in the e-learning domain in higher education. The following discussion will highlight some of the current trends in the e-learning field. Trends provide important directives for research initiatives and may also contribute to our understanding of issues relevant in the field of study.

2.6.3 *e-Learning work environment*

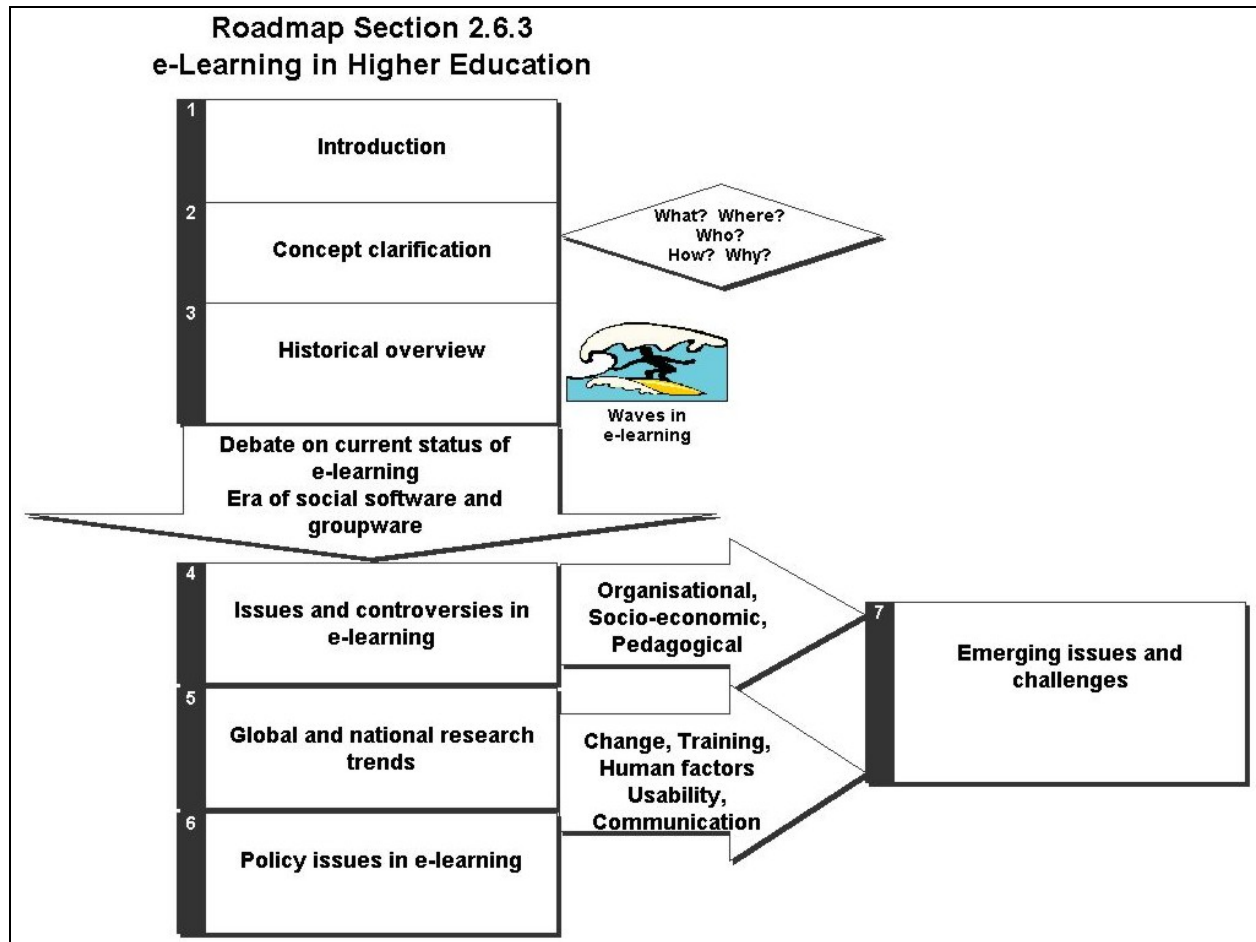
The third main focus area identified as relevant for this study is the e-learning work environment in higher education. As already mentioned the e-learning work environment is also one of the dimensions of the person-job fit triad, its position is graphically represented in Figure 2.4.

Figure 2.4: e-Learning work environment in person-job fit triad



This section is structured in terms of the section layout structure proposed: (1) introduction (2) clarification of the concept, (3) historical overview of the evolution of e-learning, (4) issues and controversies in the field of e-learning, (5) global and national research trends and reports on research done in this field, (6) policies on e-learning, (7) and emerging issues and challenges in e-learning (see Figure 2.5 for a graphical presentation of the layout structure of the section on e-learning).

Figure 2.5: Layout of the sections on the e-learning work environment



2.6.3.1 Introduction

Trends and issues that emerged from the literature review on e-learning in higher education are clustered around the themes of ongoing change in the e-learning environment, sustainability pertaining to e-learning and e-learning practice; professional development and training to cater for the increasing demand for empowered e-learning practitioners; and a new appreciation for the human side of e-learning (Collis & van der Wende, 2002; Attwell, 2004; Beetham, 2004a; Nichols & Anderson, 2005). Oliver and Dempster (2002) also include skills training for e-learning practitioners, formal accreditation programmes, special units for online course curricula, as well as informal training, as important trends and issues in e-learning. They add that organisational approaches such as focusing on e-learning strategies, organisational structure, management processes, roles and skills of practitioners and the nature of technology itself, staff development programmes that focus on binding the concerns of pedagogy, economy, technology and administration within structures directly supporting this, are important considerations in e-learning (Oliver & Dempster, 2002). The latter are important for this study in terms of **providing a holistic view on the main e-learning focus area**, and also to accomplish the four literature review purposes as proposed by Creswell (1994) (see section 2.3).

Studying the above-mentioned trends and issues also revealed a number of assumptions, errors of reasoning and probing questions regarding the main e-learning focus area. My observations in this regard are presented in Table 2.1.

Table 2.1: Observations on trends and issues in the e-learning work environment

What are the assumptions inherent in trends and issues in the e-learning work environment?
<p>e-Learning practitioner support is embedded in the particular higher education organisation.</p> <p>e-Learning practitioners need different and new skills for e-learning practice.</p> <p>Teaching online differs from traditional teaching.</p> <p>e-Learning practitioners should possess special personality characteristics.</p> <p>To accommodate e-learning and the e-learning practitioner, higher education organisations should make certain adaptations.</p> <p>Training and staff development to empower e-learning practitioners should be done by staff development departments.</p>
What are the errors of reasoning?
<p>Current teachers become online teachers:</p> <p>Although the important differences between traditional teachers and e-learning practitioners (online teachers), their respective jobs and the knowledge and skills needed to perform these jobs are repeatedly stated in the literature (Brennan <i>et al.</i>, 2001; Brennan, 2003a) the assumption is made that traditional teachers will transform to become online teachers. The expectation is that the transformation and migration processes from being a traditional teacher to becoming an online teacher will occur naturally and that the person will grow into the new role provided the necessary support measures are in place in the organisation. Therefore solutions for enhancing this migration process are to provide the necessary training to empower the e-learning practitioner for the new roles. The transformation process is supported by organisational support systems, staff development and training efforts. Surely this is one acceptable solution for the changing e-learning work dilemma?</p> <p>However, there are certain contradictions in this line of reasoning. Stated in the literature is the importance of the special characteristics needed by e-learning</p>

**Table 2.1: Observations on trends and issues in the e-learning work environment
(continued)**

practitioners to successfully practice e-learning (Kemshal-Bell, 2001; Palloff & Pratt, 2001b; Salmon, 2003;). These characteristics are inherent and stable attributes of their personalities that will not necessarily be changed by the type of training offered by training programmes focusing on technological skills or knowledge acquisition about e-learning and e-learning approaches. No reference in the literature is made to training and staff development programmes that accommodate the special person attributes needed by the e-learning practitioner in terms of either the learning style preferences of the e-learning practitioner as learner, or the importance of recognising or identifying the special characteristics needed by the e-learning practitioner.

Current teacher jobs become online teacher jobs:

Authors (Zemsky & Massy, 2004) explicitly agree that the transformation process and the transfer from the traditional to the e-learning environment are not always successful and may result in endless frustration for practitioners. The main questions here are:

“How did the person become involved in e-learning practice?” “Did the practitioner become involved as result of his/her own interest, as a result of selection processes or as a result of being told to do the job in a top-down approach from the organisation?” (Donnelly & O’ Brien, 2005; Nichols & Anderson, 2005). Each of these scenarios may impact differently on the interaction between the person and the job – resulting in a variety of outcomes. A more detailed discussion on the theory of technology adoption cycles will follow in subsequent sections (Mackintosh, 2004).

Some organisations may implement e-learning using informal, ad hoc approaches (Oliver & Dempster, 2002; Nichols & Anderson, 2005), with the effect that frustrations experienced by the e-learning practitioner may result in a movement back to previous comfort zones to avoid further discomfort and frustration. If the e-learning approach is more formal and commitments of the e-learning practitioner cannot easily be disregarded, the mismatch between the person and the job may lead to frustration, stress, loss in productivity and job dissatisfaction (Tziner, 1987; Tett & Burnett, 2003; Westerman & Cyr, 2004). Remediation in terms of staff development and training programmes providing a variety of knowledge and skills training may alleviate some of the discomforts (Attwell, 2004), but the cardinal issue in the world of the living organisation paradigm – the person-job fit – is ignored.

**Table 2.1: Observations on trends and issues in the e-learning work environment
(continued)**

<p>Although teaching and principles from the teaching profession form the foundational point of departure for discussing e-learning practice and the e-learning practitioner, there is a distinct difference between traditional and e-learning teaching and learning practices. Errors in reasoning about these practices emanate from the premise that the one is just a continuation of the other in an online environment. In other words, the assumption is that existing input influenced by new processes would produce new output thus ignoring the call from various researchers (Brennen, 2003a; Gray, Ryan & Coulon, 2003) that the “input” in terms of the person attributes needed are different from the current requirements.</p>
<p>The question remains ...</p>
<p>If we need new roles, new pedagogical approaches, new knowledge and skills and new online environments for the e-learning practice, should we not also look at new attributes for the person performing the job? Or do we apply cosmetic remediation strategies without looking at the core of the matter? Does the answer lie in the field of personnel selection, personnel development, training and self-awareness programmes or in changing the job? What is the career path envisaged for the e-learning practitioner – that of a specialised teacher or an entirely new career path? Would the implementation of e-learning be more successful if e-learning is valued as a new career path? Current research on e-learning does not provide sufficient answers to these questions and seems to overlook human work style behaviour as an important aspect of the world of work. Furthermore, the literature review revealed a gap in the literature regarding formal studies done on the characteristics of the e-learning practitioner or the e-learning job, the person-job fit in terms of the e-learning environment or the selection criteria for a formal e-learning job.</p>
<p>In this study I will argue that knowledge about the characteristics of e-learning practitioners and e-learning practice (the job), and how these characteristics fit together in terms of goodness of fit in various e-learning work environments, may contribute to our understanding of the e-learning practitioner construct in terms of a number of possible person-job fit scenarios (research question 3).</p>

Central to our understanding of the e-learning practitioner construct is the concept of e-learning. The following paragraphs will clarify the e-learning concept and highlight historical aspects relevant to topics of trends, issues and controversies in the e-learning work environment, global and national research trends, and reports from other related studies; policies and related issues; emerging issues and challenges.

2.6.3.2 Clarification of the e-learning concept

Looking at the e-learning concept may provoke a number of “what”, “where”, “who”, “how” and “why” questions. Because of the complex nature of this concept, these questions are difficult to answer in simple terms. Views on e-learning differ greatly and are generally coloured by the interpreter’s conceptual framework. To provide the reader with a frame of reference, concepts relevant to e-learning are defined in the next paragraphs.

2.6.3.2.1 What is e-learning?

A variety of definitions, some contradictory, is typical of the confusion inherent in describing the phenomenon “e-learning”. Views are largely influenced by the question “why” – in other words understanding comes with understanding the purpose of e-learning.

After a Google search on the question: “What is e-learning?”, various definitions reflecting different viewpoints were found. Frequently mentioned aspects were utilisation of networks for delivery; Internet learning activities; synchronous, asynchronous, instructor-led or computer-based learning; automated test questions providing instant trainee feedback; and any technologically mediated learning using computers – whether from a distance or in a face-to-face classroom setting.

At **TUT the concept of e-learning** is best described as “learning facilitated and supported through the use of information and communications technology” (JISC, 2004a:10),

...which

“covers a wide set of applications and processes such as web-based- and computer-based learning, virtual classrooms and digital collaboration”
(Northeastern Illinois University, n.d.).

...it may include

“the delivery of content via Internet, Intranet, audio and videotape, video conferencing, CD-ROM and mobile technology” (Northeastern Illinois University, n.d.). Communication tools, include email, discussion boards, chat facilities, virtual learning environments (VLEs) and learning activity management systems (JISC, 2004a). Therefore the term ‘e-learning’ is an umbrella concept that includes applications such as analogue video as well as digital applications. “Digital learning is the educational approach that integrates technology, connectivity, content and human resources. When implemented correctly, it builds on the unique, dynamic characteristics of digital content to create

productive and engaging learning environments” (CEO Forum on Education and Technology, 2000).

...e-learning activities may cover a

range of activities from actions to support learning, from blended- or multimode learning, to learning delivered entirely online (JISC, 2004a:10).

...e-learning is no longer

“simply associated with distance or remote learning, but forms part of a conscious choice of the best and most appropriate ways of promoting effective learning” (JISC, 2004a:10).

...where

the “e” is usually written in lower case, supplementary to “learning”. Although some authors translate the “e” to enhance to move to “enhanced learning” (JISC, 2004a:10), the majority of authors use the “e” as an abbreviation for “electronic”, adding a technological edge to the learning part but keeping the focus on learning as the vital element.

Morrison (2003:4) underlines this very important key concept by saying “e-learning is the continuous assimilation of knowledge and skills by adults stimulated by synchronous and asynchronous learning events and sometimes Knowledge Management outputs – which are authored, delivered, engaged with, supported and administered using Internet technologies”.

“E-learning has a responsibility to stimulate the learner by providing explicit knowledge but the responsibility of transforming explicit knowledge into tacit knowledge – taking personal ownership of it – can only ever be the learner’s” (Morrison, 2003:6).

Salmon (2003:4) summarises the many definitions and applications of e-learning by stating that the main difference is “between those who see online as based on instruction and transmission and those who see the learner’s experience as central to knowledge construction”.

Although social constructivism (Jonassen, 1995) is in line with the assumptions used in this study, recognising the learner as one of the main role players in the e-learning environment, the investigation of learner aspects will not be included in this study. This study will only concentrate on the **e-learning practitioner** and **e-learning practice** in higher education as embedded concepts in the **e-learning practitioner construct**.

Why is e-learning needed?

Recurring arguments in the literature about the “advantages” of e-learning highlight the underpinning differences in point of departure. Debates about “e-learning hype or hope?” (Rice Knowledge Bank, n.d.b) and “[g]ood teaching is good teaching, no matter how it's done” (World Wide Learn, 2005) are ongoing but not relevant for this study. Depending on the purpose of e-learning implementation, a specific application may prove cost-efficient or cost-effective in a given situation but cannot be assumed to be of advantage under different conditions (Rice Knowledge Bank, n.d.a). Looking at the unique features of e-learning may illustrate the diverse application of technologies in a number of settings. Considering the fact that e-learning practitioners practise in such a diverse environment, it would be valuable to highlight some of these unique environmental features.

One unique feature of e-learning in higher education is that the online, networked e-learning hubs may provide opportunities for (a) self-paced learning, 24/7 accessibility, communication and collaboration spanning distance, time and space (Shin, 2004), availability of diverse and extensive online resources, flexibility and portability to choose technologies and content according to style (CEO Forum, 2000); (b) new pedagogical/androgogical/heutagogical approaches (Hase & Kenyon, 2000) and (c) innovative learning design to engage a more diverse learner body (Mayes & de Freitas, 2004).

Another important feature is a combination of blended learning and face-to-face contact with online, networked e-learning hubs (Skills and Education Network, 2004), which may provide opportunities for (a) personal lecturer-learner and learner-learner contact, (b) the successful use of applications such as multimedia and electronic testing that are sometimes problematic to use in pure online settings and (c) continuous action research and development evaluation to improve practice and the adoption of improved technologies and approaches.

Where does e-learning take place?

e-Learning is about the application of electronic and Internet technologies to facilitate and enhance learning and may be one or a combination of online methods with no face-to-face meetings; blended learning – a combination of online and face-to-face, synchronous, asynchronous, instructor-led group; self-study; self-study with subject matter expert; and web-based or computer-based -CD-ROM (World Wide Learn, 2005). Choices about the application of the different technologies in e-learning influence the nature of the e-learning environment, which has an impact on the way e-learning practice is conducted and is therefore relevant and important to note.

How is e-learning practised?

Different theoretical and androgical approaches influence e-learning practice and will be reflected by the e-learning course or programme and, in the broadest sense, “effective learning is likely to occur when opportunities to learn involve the right resources, ...mode of delivery, ...context, ...learners with the right level of support” (JISC, 2004a:11). My experience as an instructional designer for e-learning environments has taught me that the following aspects may be part of e-learning courses and programmes:

- Learning management systems and content management systems to provide structures for administrative and course management activities such as student tracking and presenting students’ grades.
- Course content in formats such as e-lectures, resource repositories and online textbooks. Different multimedia applications may be added to illustrate important concepts.
- Communication may be formal and informal using discussion forums, e-mail, chat rooms and cell phones. Asynchronous or synchronous online communication is most important in the e-learning environment to provide courses with the dynamics for interaction and to make courses “come alive”.
- Support systems are crucial for the sustainability of e-learning and may include support from facilitators, online tutors, assistants, and electronic support systems, for example toolkits, frameworks and models.
- Assessment systems using e-testing, self tests, e-portfolios and online assignments are important for continuous and summative student evaluation as well as for conducting surveys pertaining to course and e-learning practitioner evaluation by the students.
- Activities to engage students in the teaching and learning process are vital and may include e-tivities, games and simulations for individual students as well as for online collaboration groups. Groupware including the use of bloggers and wiki’s are becoming powerful collaboration tools.

Effective e-learning practice is a complex and creative process involving elements of analysis, planning, design, development and evaluation with the aim to identify *inter alia* learner’s needs, learning outcomes, e-tivities and delivery modes. A detailed discussion on e-learning practice follows in the section on e-learning practice (see par. 2.6.4).

Who practises e-learning?

For this study the term ‘e-learning practitioner’ captures the characteristic profile of teachers/lecturers/instructors who create, use and maintain electronic teaching and learning environments for themselves and their learners for androgical purposes. These instructors are professional educators and subject matter experts and may also include instructional

designers and conceptual designers of curricula. Team members such as facilitators, e-moderators and mentors, online tutors, assistants, learning technologists, IT specialists and organisational support may collaborate with the e-learning practitioner (Oliver & Dempster, 2002). A detailed discussion on the e-learning practitioner follows in section 2.6.5.

2.6.3.3 Historic overview of e-learning development

Comprehension of the historic origin of current trends will contribute to an understanding of the dynamics involved in the e-learning environment that impact on the e-learning practitioner and the e-learning practice. The history of e-learning development is described in Appendix B1 and presents a brief description of the various 'waves' in e-learning, which may provide the reader with an additional roadmap to contextualise the TUT environment in an e-learning setting.

Please note the following

The following discussions on issues, controversies and trends in the e-learning work environment and research trends in this field are relevant to the study in terms of the 'structuredness continuum' in the e-learning work environment. For example, formal vs. laissez faire organisational approaches, change management and efforts to retain sustainability impact on the 'structuredness' of the e-learning work environment. Many of the unique policy issues in e-learning relate to e-learning environmental changes that once again impact on the 'structuredness' of the e-learning work environment. The latter is a primary dimension in the person-job fit triad.

2.6.3.4 Issues and controversies regarding e-learning

Meta-evaluation and analysis of innovation in European e-learning practice reports three main themes reflecting the issues in e-learning, namely organisational/institutional socioeconomic and pedagogical issues (DELPHI, 2002). As was also reported by a number of authors and reports (Gunn, 2001; Twigg, 2001; Browne & Jenkins, 2003; Salmon, 2003; Attwell, 2004; Vuorikari, 2004; Nichols & Anderson, 2005; Thompson, 2005), a number of issues cluster around the three main themes mentioned in the DELPHI (2002) report. To summarise such issues, Table 2.2 presents a synthesis of the most prominent issues mentioned.

Table 2.2: Summary of current issues in e-learning

(summarised from Gunn, 2001; Twigg, 2001; Browne & Jenkins, 2003; Salmon, 2003; Attwell, 2004; Vuorikari, 2004; Nichols & Anderson, 2005; Thompson, 2005)

Organisational and institutional issues
<p>Cost-effectiveness:</p> <p>Standardisation, resource sharing and reuse of resources are seen by some as ways to ensure cost-effectiveness and cost reduction, while others are of the opinion that quality, access and cost are intertwined and that the cost of online learning depends more on context.</p>
<p>Accessibility and bandwidth:</p> <p>Without technological support to enable and service e-learning facilities, e-learning would become extremely difficult. Crucial aspects for successful e-learning, such as access to online teaching and learning services, information and support, need a backbone of adequate bandwidth for execution. Bandwidth is a major issue for e-learning, affecting not only the instructional design of course content but also the design of applications and platforms and, consequently, selection of these by institutions.</p>
<p>Quality:</p> <p>The importance of effective e-moderation as underpinning the delivery of quality online education is well cited by various authors.</p>

Table 2.2: Summary of current issues in e-learning (continued)

Socio-economic issues
<p>e-Learning standards:</p> <p>Despite huge investment in platforms such as LMS systems and great effort in producing learning materials, continuous and rapid changes in the field have “rendered much of the expense and effort redundant” (Attwell, 2004:4). Interoperability between different learning systems and platforms has become increasingly important. Interoperability through content and technical standardisation as visualised by the introduction of learning object repositories has created high expectations for a more streamlined approach, but has also triggered many debates regarding usability, contextualisation, communities of practice, metadata standards and so on.</p>
<p>Hardware and software:</p> <p>Infrastructure, technical support and considerable expenditure on software, hardware and networks are major issues in the e-learning environment. The availability of open source software (OSS) opens different venues for educational software but, due to uncertainty about standards and lack of knowledge amongst policymakers, the debate about the advantages and disadvantages of OSS have led to the failure to fully exploit the potential of OSS.</p>
<p>Globalisation and competitiveness:</p> <p>“There is an urgent need to make the current training systems better available, more effective, accurate and flexible in order to enable true training on-demand services for the individuals and their work organisations ... and most importantly to make this practice of professional development a continuous one” (DELPHI, 2002:28). Higher education institutions need to cope with rapid changes as well as international competition, which demand new conditions for finances, staff qualifications and staff time. The DELPHI (2002:29) report points out that globalisation is one of the key factors driving the new European learning economy/learning society.</p>
<p>Intercultural differences:</p> <p>Networking and sharing are becoming buzzwords in the e-learning environment; however intercultural differences and language barriers especially in the European, African and Asian countries are issues that need to be addressed with sensitivity.</p>
<p>Funding:</p> <p>Higher education institutions are investing heavily in technological and networked systems. One of the main problems and a considerable barrier for many institutions is the fast pace of software development, the release of endless new versions and the expense of upgrades.</p>

Table 2.2: Summary of current issues in e-learning (continued)

Pedagogical issues
<p>Teaching and learning philosophies:</p> <p>Trends in the e-learning environment are recognition of the change <i>from a teacher-centred to a learner-centred approach</i>, changes from pedagogy to andragogy and even to heutagogy (“self-determined learning”) (Hase & Kenyon, 2000:1) and challenges for the way in which learning can be facilitated and managed effectively. There is an ongoing debate as to what constitutes effective practice and how pedagogical approaches can cater for the needs of particular subjects, different learners and varying contexts or situations for learning.</p>
<p>Teaching techniques, methods and devices:</p> <p>Through new communication and interaction technologies, the availability of networked computers raises challenging issues including complex partnerships and “networked learning” (Salmon, 2003:10). Networked computers offer possibilities for the development of online knowledge building and learning communities.</p>
<p>Teacher workloads</p> <p>Workload demands on e-learning practitioners are considerably greater than those in regular everyday teaching practice. Although attitudes towards e-learning, varying between technophobia and technophilia, will always influence the job approach and involvement of the e-learning practitioner, it is widely recognised that institutions need policies and benchmarking procedures to accommodate changing job structures.</p>
<p>Staff development, teacher training, and teacher collaboration:</p> <p>Changes in the traditional higher educational environment are accompanied by changing roles and training for new job profiles to provide for new attitudes, knowledge and skills in e-learning practice. However, the most important issue is to provide support and scaffolding for staff members in the changing pedagogical/androgogical roles. Various roles, such as online facilitator or e-moderator, course developer, researcher, learning technologist or subject specialist, suggest not only enormous pressure but also vast possibilities for the training and professional development of the e-learning practitioner. Attwell (2004) points out that professional development programmes tend to focus too narrowly on the technology and do not always see the big pedagogic picture. He emphasises that the roles of teachers, and strategies for supporting, their new roles are major issues in e-learning.</p>

2.6.3.4.1 e-Learning issues in Southern Africa

Issues relating to e-learning as outlined in the preceding paragraphs are also applicable in the Southern African region. However, this region has a number of very specific geographical, economic and social issues that influence e-learning implementation (Gumbe, 2004: slide 4; Czerniewicz & Carr, 2005:2). Participants in e/merge 2004, a recent online conference, debated issues regarding the application of information and communication technologies (ICT) in education, and agreed that access to ICT is a key issue that both “restricts and enables learners’ changing literacies” (Czerniewicz & Carr, 2005:5). Although globalisation alters regional homogeneity, there are still real, stark differences between the North and the South in terms of access to ICT, Internet bandwidth and connectivity and e-readiness (Czerniewicz & Carr 2005:2). Comparing Internet users from Africa and North America reveals the lowest percentage (2,7%) population penetration in Africa and 68,1 percent in North America (Internet usage and population statistics for Africa, 2005). Although Africa has the second largest population percentage in the world, it has the second lowest percentage of Internet users; however it has an enormous Internet user growth rate of 428,7 percent (see Table 2.3) (Internet usage and population statistics for Africa, 2005).

Table 2.3 Internet users and population statistics for Africa

INTERNET USERS AND POPULATION STATISTICS FOR AFRICA						
AFRICA REGION	Population (2005 est.)	Pop. % in world	Internet users, latest data	Use growth (2000-2005)	Penetration (% Population)	% Users in world
Africa	896,721,874	14.0 %	23,867,500	428.7 %	2.7 %	2.5 %
Asia	3,622,994,130	56.4 %	327,066,713	186.1 %	9.0 %	34.2 %
Europe	731,018,523	11.4 %	273,262,955	165.1 %	37.4 %	28.5 %
Middle East	260,814,179	4.1 %	21,422,500	305.4 %	8.2 %	2.2 %
North America	328,387,059	5.1 %	223,779,183	107.0 %	68.1 %	23.4 %
Latin America/Caribbean	546,723,509	8.5 %	70,699,084	291.31 %	12.9 %	7.4 %
Oceania / Australia	33,443,448	0.5 %	17,655,737	131.7 %	52.8 %	1.8 %
WORLD TOTAL	6,420,102,722	100.0 %	957,753,672	165.3 %	14.9 %	100.0 %

Internet usage and population statistics for Africa was updated on 30 September 2005. ©Copyright 2005, www.InternetWorldStats.com (Miniwatts International, n.d.).

A comparison of Internet usage in the different regions in Southern Africa shows South Africa as the country with the most Internet users but the lowest use growth rate of 99 percent. Zimbabwe and Zambia have use growth rate figures of more than 1000 percent (see Table 2.4).

Table 2.4 Internet usage statistics for Africa

INTERNET USAGE STATISTICS FOR AFRICA						
AFRICA	Population (2005 est.)	Internet users Dec/2000	Internet users, Latest data	Use growth (2000-2005)	% Population (Penetration)	(%) Users in Africa
Angola	12,918,595	30,000	172,000	473.3 %	1.3 %	0.7 %
Botswana	1,820,498	15,000	60,000	300.0 %	3.3 %	0.3 %
Egypt	69,954,717	450,000	4,200,000	833.3 %	6.0 %	17.6 %
Mozambique	19,416,143	30,000	138,000	360.0 %	0.7 %	0.6 %
Namibia	1,994,816	30,000	75,000	150.0 %	3.8 %	0.3 %
Nigeria	156,468,571	200,000	1,769,700	784.9 %	1.1 %	7.4 %
South Africa	48,051,581	2,400,000	4,780,000	99.2 %	9.9 %	20.0 %
Swaziland	1,121,937	10,000	36,000	260.0 %	3.2 %	0.2 %
Zambia	11,015,072	20,000	231,000	1,055.0 %	2.1 %	1.0 %
Zimbabwe	12,095,233	50,000	820,000	1,540.0 %	6.8 %	3.4 %
TOTAL AFRICA	896,721,874	4,514,400	23,867,500	428.7 %	2.7 %	

Internet usage and population statistics for Africa were updated on 30 September 2005. ©Copyright 2005, www.InternetWorldStats.com (Miniwatts International, n.d.).

According to Czerniewicz and Carr (2005:2), the “explosive growth of wireless connectivity across developing countries has only started to impact on Southern Africa”, however, in terms of e-readiness South Africa ranks the highest of the African countries. Rural/urban separations are typical of many African countries including South Africa and may result in the uneven distribution of teaching and learning infrastructure and resources. Although South Africa is often regarded as part of the Third World, there are “pockets of first world education facilities” (Kistan, n.d.:4). Kistan (n.d.) is of opinion that the disparity between different higher education institutions presents complex challenges in terms of the implementation of e-learning. Issues such as lack of comprehensive infrastructure, insufficient bandwidth and financial support, few trained e-learning practitioners, computer illiteracy, lack of technical skills to maintain systems and the cost of e-learning mentioned earlier are also prominent in the South African context (Kistan, n.d.:5; Czerniewicz & Carr, 2005:9). Are these issues and challenges important in the e-learning work environment at TUT? How do these issues, if relevant in the e-learning work environment at TUT, influence the ‘goodness of fit’ between the e-learning practitioner and e-learning practice at TUT?

Gumbe (2004: slide 4) is of the opinion that these issues and challenges are “definitely not insurmountable” and could be met by greater state intervention, partnerships between state, business, donors (local and international) and civil society, and the willingness to give e-learning a chance.

Although different strategies for promoting access to ICT in South Africa exist, the promotional efforts are directed more towards community development and schools and not at higher education per se (Schoolnet, 2005), they may provide fertile ground for progress to the higher education level in terms of skills and knowledge competencies for learners and teachers alike. The Commonwealth of Learning (COL) has established partnerships with a number of countries including South Africa (Commonwealth of Learning, 2005). One of the partnership initiatives is to develop a toolkit for developing schoolnets in Africa. According to Halse (2002), the partnerships between SchoolNet SA and a number of other companies and organisations have resulted in a good support network, including computer and network infrastructure. Will this also be the case if a HigherEducationNet is developed in South Africa? Although interventions such as support systems may influence the dynamics in the e-learning practitioner system (see interactionist model in Figure 2.18) and may contribute to changes in the e-learning work environment, the question remains whether these changes are experienced by the individual e-learning practitioners as demands, distracters or releasers for their e-learning practice?

2.6.3.5 A snapshot of global and national research trends in e-learning

Current e-learning research trends are mostly directed by the e-learning issues mentioned in section 2.6.3.4, as well as developments in the fields of social software and groupware (Browne & Jenkins, 2003; JISC, 2004a; Zemsky & Massy, 2004; Elgort, 2005). Such developments highlight the importance of human factors and communication in the technology-driven e-learning environment (Beetham, 2004b).

Implication for this study

The following paragraphs will give a synoptic account of the status of current research trends in e-learning. These trends are of importance for the study in terms of contextualising the e-learning practitioner and the e-learning practice.

A comparative research study conducted by Collis and van der Wende (2002) studied the use of e-learning in higher education in countries such as the Netherlands, Germany, Norway, the United Kingdom, Australia, Finland and the USA. Findings from this study include the following observations:

- (1) change in the e-learning environment is slow, and not radical,
- (2) ICT in teaching and learning is widespread but part of a blend;
- (3) Instructors are gradually doing more, but with no reward;
- and (4) Instructors are not changing their ways of teaching even though they use ICT in different ways (Collis & van der Wende, 2002:7-8).

The researchers summarise their findings as the following: institutions are moving to a stage where e-learning participation is encouraged, pedagogical use of this infrastructure is in many

cases still in development (Collis & van der Wende, 2002: 16) and the “main challenge for both institutions and governments is how to develop more strategic policies on how ICT can be used for the different target groups that higher education is expected to serve in the knowledge economy in the 21st century” (Collis & van der Wende, 2002:65). They conclude by stating that institutions need to develop strategic policies for accommodating diverse learner groups, improving pedagogical use of ICT, adapting technology to different needs and providing instructor incentives to do all the required work (Collis & van der Wende, 2002:72).

Some of the issues mentioned by Collis and van der Wende (2002) are also reflected in comparative research studies done in the United Kingdom by Browne and Jenkins (2003). Research reports and survey studies by, for example UCISA and JISC in the UK, reveal a number of issues relating to virtual learning environments (VLEs), such as choice of VLEs and their implementation, technical support and training, and pedagogic issues relating to their use (Browne & Jenkins, 2003). The picture given by such reports is one of “evolutionary consolidation” (Browne & Jenkins, 2003:3), where “**centralisation** is increasing on matters considered strategic, development is occurring for a range of **support activities** [and] there is a markedly **greater use of VLE’s**” (Browne & Jenkins, 2003:3).

One notable conclusion from the UCISA report is that “the career implications for academic staff spending time exploring the use of a VLE in their learning and teaching are not perceived to be very positive” (Browne & Jenkins, 2003: 34). This report underlines the view of the researcher that there is a general lack of appreciation amongst higher education institutions for the different career paths and the possible career development scope for e-learning practitioners. However, research initiatives by various groups (CeLP, 2005) to certify e-learning professionals (Training Foundation, 2004c) and to develop job descriptions, for example the learning technologist as proposed by Oliver and Dempster (2002), are steps towards defining new e-learning career paths (Oliver & Dempster, 2002; Oliver *et al.*, 2004). Oliver and Dempster (2002) state that “e-learning practices can develop in isolation from other teaching practices but must be educationally sound. That is not to say the IT infrastructure and technical expertise dependencies can be underestimated but simply that progress is often held back not by infrastructure constraints but by issues like **motivation, skills and staffing**”. Should we not also add to this list person attributes and diverse work behavioural styles? Oliver and Dempster (2002) continue by suggesting that e-learning development should receive the same incentives that reward teaching, for example performance rewards and accreditation.

The European Commission eLearning Initiative launched in May 2002 aimed to accelerate the integration of e-learning in the educational systems of Europe and, in a report titled ***A world of learning at your fingertips***, lists 43 pilot projects that ran between 2001 and 2004 and another

70 projects that were launched in 2004. Snapshots from these projects reveal that five international universities participated in a project running from 2001-2003 to strategise for a future European Virtual University (DELPHI, 2002). Reports from this project reiterate the importance of professional development for e-learning practitioners and propose a shared framework for teachers' professional development as a tool for harmonising European Union policies and practices (European Commission eLearning Initiative, n.d.). Other key findings pertain to **sustainability**, scalability and transferability of innovations and once again point out the importance of these key issues (DELPHI, 2002).

Organisations such as the Advanced Learning Infrastructure Consortium (ALIC) in Japan and the e-Learning Competency Centre (ECC) in Singapore focus their efforts on **e-learning standardisation**. The ALIC's primary focus is on "activation of the e-learning industry", whilst the ECC's mission is to "foster excellence in e-learning by driving the adoption of **standards** and developing the **competencies of professionals** in order to establish Singapore as a renowned e-learning hub in the Asia-Pacific region" (Friesen, 2003).

Quality and standards are highlighted by Thompson (2005) as prominent challenges in e-learning research in the United States of America (US). Her analysis of the research context in the US was based on research studies published in 2004. Findings pertain to organisational challenges in terms of policy research, finances, competition, faculty support and quality assurance; faculty experience and pedagogy in terms of changing roles and resistance to online teaching; student experience/outcomes in terms of course design and support factors; learner retention; and contextual issues in terms of change management; and ethical issues relating to access, integrity and changing roles. Faculty and learner issues were the most prominent focus of research, whilst context and ethical issues lagged behind (Thompson, 2005). Thompson (2005) identifies a number of research gaps, for example barriers to participation in teaching online; institutional responses to faculty needs; and research focus on context and ethics.

The eLearning Guild, with a worldwide membership of 18 500 and focusing on the latest trends, best practices and pressing issues of interest to e-learning professionals, released their latest report in March 2005. Although a number of issues are addressed in their report I will highlight below only the survey statements and results relevant to this study.

1. Learning experiences in terms of knowledge acquisition and transfer: Respondents confirm the 80/20 rule when it comes to the balance between informal and formal learning.

Relevance to this study

Training is one of the most cited issues in e-learning today (e-Learning Guild, 2005), formal training programmes are more likely to succeed when supported by informal communities of e-learning practice supporting each other and sharing their experiences and best practices, thus catering for diverse work behavioural styles.

2. Trends in the design and delivery practices of e-learning point to usability. Ninety-two percent of respondents strongly agree that usability is an essential consideration when designing e-learning. Yet the respondents also indicated that about 35 percent of respondents' organisations do not test for the usability of their e-learning courses or programmes and that many of those who do test only do so sometimes. Ranking the reasons for this situation they amounted to "lack of know-how and competency; testing is too expensive, testing takes too much time and there's no reliable methodology" (e-Learning Guild, 2005).

Relevance for this study

Underpinning usability in terms of design and delivery are the issues of training, professional support and sustainability. Attwell (2004) argues that the sustainability of teacher and trainer skills and of e-learning materials development are two of five critical issues in e-learning. He links two major issues in e-learning by stating that: "For policy to be effective it requires changes in practice. Equally effective practice has to be generalised to develop sustainable responses to the challenge of e-learning" (Attwell, 2004:3).

3. It was found that a significant majority, 93 percent, define e-learning as a combination of the traditional classroom with any form of e-learning.

Relevance to this study

Change is another important issue in the e-learning environment. Not only has the traditional role of the "teacher" changed, but the practice environment is also constantly changing dramatically. Referring to Russell's compendium of more than 355 comparative research studies suggesting that learners in technology-based (typically distance learning) courses learn as well as their on-campus, face-to-face counterparts, Twigg (2001:5) summarises the current dilemma as "the problem with applying old solutions to new problems in the world of online learning is that these applications tend to produce results that are 'as good as' what we have done before – that is often referred to as the 'no significant difference' phenomenon". She continues by saying that new approaches that go beyond producing no significant difference are needed and that as long as we "continue to replicate traditional approaches online – and continue to treat all learners as if they were the same – we will once again find the 'no significant difference' phenomenon" (Twigg, 2001:11).

According to Morrison (2003:9) the key differentiator is time-critical and he quotes Wayne Hodgins as saying:

Human attention is our most valuable and scarce commodity. When our time is what we have to offer the world, we look at technology differently. We aren't distracted by the sheer novelty of what it can do. We want to know how quickly it can help us get where we want to go, do what we need to do (Hodgins, 2000:6).

In **South Africa** a dynamic and fast-moving development in the e-learning field pertains to the implementation of mobile technologies (Minges, 2004:9). Although the term m-learning might be applicable in this regard, for this discussion I include mobile technologies under the umbrella e-learning concept. According to Minges (2004:9), cell phone use in Africa has increased at an annual rate of 62.5 percent, which is the world's fastest growing mobile market. He continues by saying that the mobile telecommunication sector is one of Africa's success stories (Minges, 2004:9). The enormous potential of mobile technology in the e-learning environment was illustrated by the DEEP project (DEEP IMPACT, 2004). Although this project was done in the primary school context, the results achieved may have a ripple effect on teacher training and professional development. The UK Department for International Development (DfID) in collaboration with the University of Fort Hare, South Africa and the Programme, Planning and Monitoring Unit, Cairo, Egypt, launched a research and development project involving 48 teachers and over 2000 children from primary schools in the Eastern Cape Province, South Africa (DEEP, 2005; Jordaan, 2005). A combination of laptop and hand-held computers was used by the teachers to implement and evaluate a school-based professional development programme. Teachers and learners successfully utilised the available technologies in their class activities, and it was evident that the users could quickly develop a range of ICT skills (DEEP, 2005).

2.6.3.6 Policy issues in e-learning

e-Learning in higher education triggers unique policy issues, which include the major policy areas of funding, intellectual property, quality assurance, transfer and articulation, and tuition and fees (EduTools, n.d. a). Priorities listed are *inter alia* **good quality training and support packages for practitioners** (Palloff & Pratt, 2001a; Department for Education and Skills (DfED), n.d.; 2003; 2005); **sustainable e-learning futures** and e-learning needs for a foundation of **sound pedagogical approaches** (Mackintosh, 2004:14); to **enhance research into technological change and innovation** (Finnish Technology Policy, 2003; Kirkman, Osorio & Sachs, 2005; Network Readiness Index, 2005); to **improve teacher training**, support e-learning and virtual schools, encourage broadband access, move towards digital content and

integrate data systems (Education: the promise of America, 2004; National Education Technology Plan, 2004).

With the exception of Botswana, few regional countries in Southern Africa have specific educational technology policies (Czerniewicz & Carr, 2005:8). Countries such as Mozambique view ICT as a driver for the economy and not as an important priority in education (Czerniewicz & Carr, 2005:5). During the past decade, higher education in South Africa has undergone transformational mergers and structural **changes**. Structures such as the South African Qualification Authority (SAQA) and the Council on Higher Education (CHE) were established to assist with the implementation of various education policies (Kistan, n.d.). The National Qualification Framework (NQF) has been published to support the drive towards uniform **quality standards** in the higher education sector (Kistan, n.d.:3). This framework aims specifically at compliance requirements, responsibilities and implementation mechanisms in terms of “standards of teacher development, accessibility and usability of electronic content, interoperability, connectivity, flexibility of hardware and software and community engagement” (Draft White Paper on E-Education, 2003:27). A set of broad principles reported in the Framework for Teacher Education in South Africa include the “right to quality education for all; schooling seen as a public good, for which public funding is provided and **teachers are key agents** in the quality of the educational system” (Department of Education, 2005:3). From its e-Education policy goal it is clear that the Department of Education recognises the importance of ICT (Surty, 2005).

Every South African learner in the general and further education and training bands will be ICT capable (that is, use Information and Communication technologies confidently and creatively to help develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community) by 2013 (E-Education Draft White Paper, 2003:19).

Teacher and learner training as well as **research linked practice** are mentioned under the proposed strategies for reaching the goals of the Education Draft White Paper (2003:21). Another notable issue is the digital divide, which is not only about connectivity and infrastructure disparities but also about local language content development, sharing knowledge, capacity building and professional training for teachers (Education Draft White Paper, 2003:7). Although the E-Education Draft White paper is primarily about e-learning in schools, the role of higher education in the e-learning environment is recognised in terms of teacher training and collaborative research (Education Draft White Paper, 2003:21).

2.6.3.7 Emerging issues and challenges in e-learning

Evident from the preceding discussion on e-learning issues, research trends and policies is the importance of **change, sustainability, professional development and training and a new appreciation for the human side of e-learning** as emerging issues and challenges in the e-learning work environment. The following sections will comment on these.

These issues are particularly important in a discussion on the e-learning work environment as they impact differently on the nature of this environment. For example, frequent changes may influence the e-learning work environment in such a way that it becomes more chaotic and unstructured. On the other hand, formal training and support programmes may influence the e-learning work environment to become more structured. Therefore influences that impact on the nature of the e-learning environment will affect e-learning practice and the e-learning practitioner in the e-learning person-job triad.

2.6.3.7.1 Change – a challenge in e-learning

Changes in any of the three dimensions of the person-job fit triad would naturally influence the relationships and interaction in the triad. Therefore changes on the 'structuredness' continuum, pace of technological innovation and degree of 'virtualness' in the e-learning work environment may impact on the 'goodness of fit' in the triad.

An important issue that Mackintosh (2004) elaborates on is that the pace of technological innovation outstrips the ability of society to absorb new innovations (Christensen, Aaron & Clark, 2003), thus if we want to be successful with e-learning we need to do things differently. Pedagogical effectiveness for "promoting human interaction and communication through the modelling, conveying and building of knowledge and skills" (Salmon, 2003:4) is at the core of 'doing things differently'. Mackintosh (2004:6) believes that "e-learning on its own is not a force that changes the way we teach", teachers still teach the way they were taught. Therefore in the words of Zemsky and Massy (2004:iii), "[e]-learning will become pervasive only when faculty change how they teach – not before". Mackintosh (2004), Zemsky and Massy (2004), and Christensen *et al.* (2003) are some of the authors that highlight change as being a major issue in e-learning.

Implications for this study

Changes in the e-learning work environment in terms of structuredness may influence the interaction between the subsystems of the e-learning practitioner system.

Changes in the e-learning work environment in terms of the pace of technological innovation may influence the interaction between the subsystems of the e-learning practitioner system.

Changes in the e-learning work environment, in terms of changing the degree of 'virtualness', may influence the interaction between the subsystems of the e-learning practitioner system.

Change in terms of adopter categories (Rogers, 1995), e-learning adoption cycles (Mackintosh, 2004; Zemsky & Massy, 2004) and S-curve patterns (EDS, n.d., Mackintosh, 2004) is important for this study in terms of contextualising the e-learning work environment at TUT.

The following paragraphs briefly illustrate the concepts 'adopter categories'; 'e-learning adoption cycle' and 'S-curve patterns'.

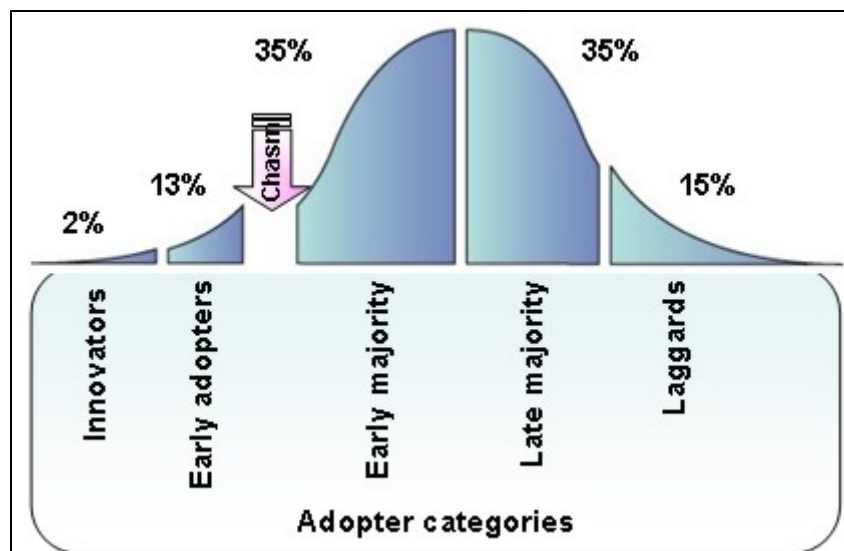
Adopter categories

Rogers (1995) in his book *Diffusion of innovations* categorises the potential users of technology based on normal distribution and standard deviation. His diffusion model proposes five adopter categories, namely innovators, early adopters, early majority, late majority and laggards (illustrated in Figure 2.6).

Figure 2.6: Adopter categories defined by Rogers (1995)

(available at

http://www.stuart.edu/courses/EBUS514/Summer2004/Classfiles/s%20curve%20in%20technology_adoption.pdf)



Moore, in his book *Crossing the chasm* (1991), uses the term 'chasm' to describe the time gap between the early adopters and the early majority, arguing that this is so because of their different expectations (Wikipedia, 2005; Wikipedia, 2006a). These adoption categories are widely used in the business and marketing environment (EDS, n.d.) and some authors, for example Zemsky and Massy (2004:9), used these categories to illustrate e-learning's pattern of innovation and change. The categories may be summarised as:

- **Innovators** (2%) – they love to explore new ideas and are driven by intrinsic motivators.
- **Early adopters** (13%) – they adopt once the concept is proven, they are viewed as opinion leaders and decision makers who have the vision to adopt an emerging technology to a opportunity and they are driven by extrinsic motivators.
- **Early majority** (35%) – eventual users who do not like to take the risks of pioneering, but see advantages of tested technologies are driven by usability and success of the technology and they are the beginning of the mass market (Beshears, n.d.).
- **Late majority** (35%) – adopt when half of the population has already done so, they are followers who dislike the disruptions of new technologies.
- **Diehards (Laggards Rogers, 1995)** (15%) – resist adopting new innovation, but says Beshears (n.d.), "they perform the valuable service of pointing out regularly the discrepancies between the day-to-day reality of the product and the claims made for it".

e-Learning adoption cycles

Zemsky and Massy (2004:10) distinguish four e-learning adoption cycles within the higher education sector. Each of these adoption cycles "represents a different stage of innovation, that also require[s] a different level of change in the existing instructional culture".

According to Zemsky and Massy (2004:11) the four levels of e-learning innovation are the following:

1. Enhancements of traditional course/programme configurations.
2. Course management systems.
3. Imported course objects.
4. New course/programme configurations currently in different stages of their adoption cycles.

The first three levels of the adoption cycles in e-learning represent one-to-many technologies and the last one any-to-any technologies (Mackintosh, 2004:13). He continues by saying that one-to-many technologies implies that the systems and teaching are defined by the designer (Mackintosh, 2004:13). Any-to-any technologies implies networks functioning as self-organising systems, where a combination of self-directed autonomous learning with multimode learning is

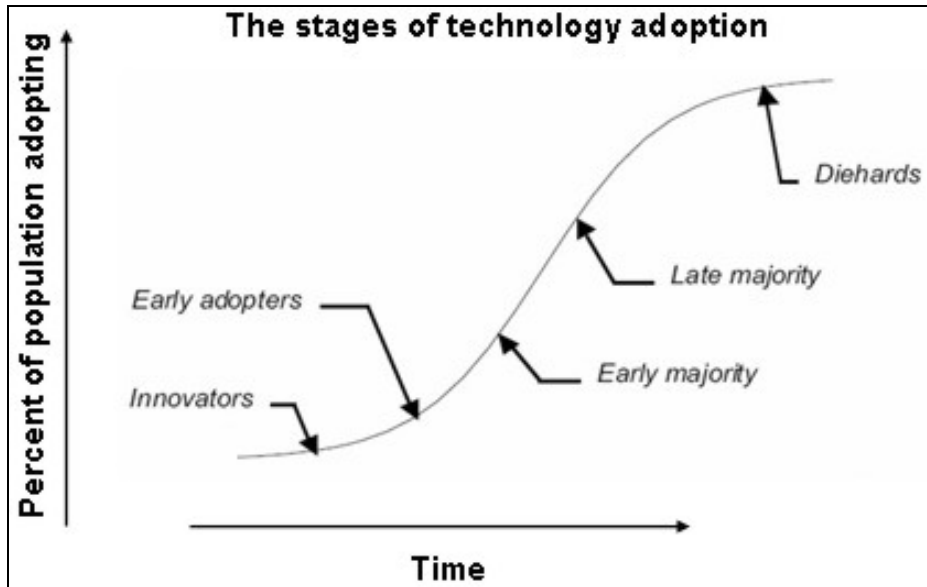
embedded in a social context (Mackintosh, 2004:13). According to Zemsky and Massy, (2004:11) the first cycle represents technology enhanced face-to-face teaching using e-mail, Internet, multimedia, e-testing and so on to enhance classroom presentations. The second cycle represents the acceptance of learning management systems to support the learner and lecturer with administrative tasks, for example test marks, schedules, study guides, access to course materials and a platform for synchronic and asynchronic communication (Zemsky & Massy, 2004:11).

The third cycle includes the adoption of learning content management systems and the importing and use of learning objects (Zemsky & Massy, 2004:11). The fourth adoption cycle represents the any-to-any technologies stage of innovation, where new configurations of teaching and learning processes develop (Mackintosh, 2004:13). E-learning practitioners and learners adopt new roles taking full advantage of the new technologies and new ways of interacting and communicating. Mackintosh (2004) prefers “new pedagogy” to “new course/program configurations” (Zemsky & Massy, 2004:11) for describing this adoption cycle, whilst Leinonen (2005) refers to this stage of innovation as the era of social software and free and open content.

These cycles may follow different paths, for example they may sometimes build upon each other, follow parallel tracks or may work against each other. Mackintosh (2004) uses the concept of sustainable and disruptive technologies that may result in new S-curves. Taking cognisance of the innovation S-curve categories is important for illustrating the current e-learning pattern of innovation and change.

S-curve patterns

According to Zemsky and Massy (2004:9) “e-learning’s pattern of innovation, change and adoption follows the classic S-curve” (see Figure 2.7).

Figure 2.7: S-Curve (as illustrated by Zemsky & Massy, 2004:9)

Technology adoption can be presented as an S-curve graph showing how many users have adopted a technology over time (EDS, n.d.:1). The speed of adoption is influenced by the amount of infrastructure required for implementation; if no new infrastructure is needed the technology will be adopted more rapidly and will be presented by a steep S-curve (EDS, n.d.:1).

Mackintosh (2004) links the idea of different phases of e-learning adoption occurring in parallel with each other to the S-curve analysis of pedagogical structure in e-learning. He uses Christensen's comparison of sustaining and disruptive technologies to illustrate that "pedagogical structure of campus-based pedagogy differs from the pedagogical structure of distance education" and argues further that the "pedagogical structure of multi-mode, multimedia pedagogy will also differ from the preceding forms of delivery" (Mackintosh, 2004:10). Mackintosh (2004:10) also believes that the first stage of technology adoption does not necessarily result in pedagogic adaptations, but fourth cycle adoption, resulting in new teaching and learning roles that alter the pedagogical structure of teaching.

Zemsky and Massy (2004) differentiate between four distinctive e-learning adoption cycles displaying "different phases of e-learning adoption that are occurring in parallel with each other" (Mackintosh, 2004:7). He adds "new" pedagogy as the last of the four adoption cycles and says that it is necessary for organisations to realise that the implementation of technology does not necessarily bring about pedagogical adaptations. Pallof and Pratt (2001b) agree with this by saying that teaching in cyberspace involves more than clothing traditional models with new clothes. Pedagogical structure changes would be the result of new roles that new learning technologies assume (Mackintosh, 2004). Breaking the constraints of time and space, the relationships between faculties, institutions and learners and how education is delivered and

learning happens (Pallof & Pratt, 2001b) will alter so that things can be done differently. Mackintosh (2004) further argues that although e-learning has yet to deliver on its hidden potential, emerging technologies have the potential to advance e-learning in unprecedented ways.

The researcher is of the opinion that new trends in e-learning focusing on social aspects, such as online communication, e-moderating, learning design in terms of e-tivities and a movement away from content-based platforms towards knowledge-building communities and communities of practice, changing the emphasis on technologies to a focus on people in the teaching and learning environment, might prove to be the trigger for changing the slope of enlightenment and the plateau of production in the next e-learning network hype cycle (see Appendix B1 for a description of Gartner's Technology Hype Cycle for e-learning (Kruse, 2002)).

2.6.3.7.2 e-Learning sustainability

In this section sustainability is discussed in terms of (1) ways to ensure that new reforms and initiatives are sustainable; (2) how to change practice; and (3) sustainability of investment in infrastructure. Sustainability is the ability of a system, "facility, project or resource to continue operating in a useful way over the long term" (SchoolNet Toolkit, 2005:86). Various authors (Attwell, 2004; Macintosh, 2004; Nichols & Anderson, 2005) refer to sustainability as a major issue in e-learning. Different sustainability elements for e-learning development have been identified, for example economic, social (acceptance by users), political (policy support), technological and educational sustainability (Schoolnet Toolkit, 2005:87). Attwell's (2004) broader categorisation includes elements such as pedagogy, hardware and infrastructure, "software and platforms, e-learning materials development, sustainable teacher and trainer skills", evaluation of e-learning and sustainability in terms of policies and may well fit into the SchoolNet's Toolkit classification (Attwell, 2004:6). The issue is how to exploit and use such resources to ensure maximum **usefulness over time**. One of the keys to sustainable and innovative e-learning practice is the provision of support particularly for e-learning practitioners (Attwell, 2004). Other keys are cost-effective financing of e-learning programmes, buy-in from the different stakeholders, change management to lower resistance to change, choice of technologies that will be effective over a long period, consistency between pedagogical and curriculum changes (SchoolNet Toolkit, 2005:88) and cycles of formative evaluation and research to learn from the results what are the best options and practices, informing further development and review of strategic plans (Attwell, 2004:63).

Why is sustainability of such importance in the e-learning work environment?

As discussed in section 2.6.3.7.1, change adopter categories are used to illustrate e-learning's pattern of innovation and change represented as an S-curve on four levels of the e-learning

adoption cycle (Zemsky & Massy, 2004). Organisational infrastructure influences the speed of technology adoption, therefore if no infrastructural sustainability is envisaged, few adopter categories beyond the innovators will be interested in getting involved (EDS, n.d.:1). Therefore it would be fair to say that e-learning practitioner groups that dislike disruptions and prefer a structured, predictable work environment will not be keen to venture into a work environment that may offer little security and support. If perceived usefulness of the e-learning work environment is negative, the majority of practitioners will not risk involvement. Technology adoption categorisation, in terms of the five adopter groups of practitioners/non-practitioners, may also be applicable in the e-learning context at TUT. Although the focus of this study is the work behavioural profiles of e-learning practitioners and their e-learning practice, categorised in terms of the DISC dimensions, the sustainability of the e-learning work environment influenced the e-learning practitioner system significantly, the reason being the impact of sustainability on the 'structuredness' continuum. If the e-learning work environment becomes unsustainable, with a lack of infrastructure, external motivators are diminished and intrinsic motivators become the drivers in the person-job interaction. This implies that people who are most influenced and motivated by external motivators may experience a mismatch with job demands.

2.6.3.7.3 Teacher training and professional development

Attwell (2004) is of the opinion that "staff development and training is central to successful and sustainable e-learning" (Attwell, 2004:61) but as long as we continue to replicate traditional approaches online and continue to treat all learners as if they were the same – we will once again find the "no significant difference" phenomenon" (Twigg, 2001:5).

Teacher training and professional development themes are identified as key elements in e-learning by a number of research reports on e-learning (A world of learning at your fingertips, 2002; Browne & Jenkins, 2003; JISC, 2004a; National Education Technology Plan, 2004; Sharpe, 2004; Nichols & Anderson, 2005, STEP, 2005/07; Tertiary Education Reforms, 2005). In a study on the attitudes of university e-learning lecturers (adopters) about e-learning practice, Elgort (2005) identified three e-learning challenges, that is, "that e-learning adoption benefits the most from one-to-one support" (Elgort, 2005:2) but is too costly to be viable. In response to this challenge, Oliver (2004:33) indicates that it might be worthwhile for institutions to invest in one-to-one support for e-learning because it proves so much more effective. Another challenge identified by Elgort (2005:2) is that teachers acquire theories and beliefs about teaching early in their careers, which they carry through when they become university lecturers and they do not change their set ideas easily. If their beliefs are based on an "information transmission model of learning they will choose technologies that support that way of learning" (Elgort, 2005:2). A changing teaching and learning environment requires new ways of thinking about practice and many teachers may find this a difficult transition. Pebble *et al.* (2005) suggest in their report on

staff development in higher education that staff development programmes may act as change agents in “transforming teachers’ beliefs about teaching and teaching practice” (Pebble *et al.*, 2005:48). In contrast, short training courses are not so useful in this regard but tend to be more effective for training staff in discrete skills and techniques.

Various research studies, for example Elgort (2005), JISC (2004a) and Oliver and Dempster (2002), indicate that it would be beneficial to raise the profile of e-learning practice as well as create opportunities to specialise in different focus areas (change the job). Accreditation for learning technologists has already been proposed in the UK (The Training Foundation, 2004c). Elgort (2005:2) identifies “raising the profile of e-learning without divorcing it from normal teaching and learning practice” as another e-learning challenge. The researcher agrees with Oliver (2004) about directing e-learning as a mainstream activity and not as something separate from other modes of learning. In the researcher’s view, it would benefit the status of e-learning practice tremendously if formalised certification for this career path could be the norm rather than the exception. In the practical situation at TUT there is no formal career path for the e-learning practitioner and the current community of e-learning practitioners evolved from the existing teaching corps. The assumption for this study would then be that the e-learning practitioners at TUT are appointed teachers who for various reasons are involved in a variety of roles in the e-learning environment.

Salmon (2003) describes the world of the e-moderator in her book *e-Moderating: the key to teaching and learning online*. She highlights the different work roles and characteristics that the e-moderator needs for effective practice. Her point of view is that the e-moderator need not be a subject matter expert which, in my opinion, gives the e-moderator a different niche for the e-learning practitioner addressed in the work done by JISC in the UK to support e-learning practitioners who are mainly focused on teachers and learning technologists (Beetham, 2004a). The demand from the communities of practice for more support was, according to JISC, triggered by the work of Salmon and the emphasis on the role of the e-moderator (Beetham, 2004a:1).

Security and support provided by staff development and training programmes contribute to the empowerment of e-learning practitioners. These practical interventions impact on the e-learning person-job fit triad and may act as positive drivers in a structured e-learning work environment.

2.6.3.7.4 Shifting the focus ...

Current movements in e-learning have shifted from an emphasis on technology to an appreciation of human aspects and the social nature of teaching and learning (Beetham, 2004b). Social software, communication tools and online communication are becoming more

important in the e-learning environment resulting in renewed research interest in the importance of social aspects for effective teaching and learning in the virtual environment (Beetham, 2004b). On the one hand the focus is on the learner, learner needs and learning styles (Pebble *et al.*, 2005) and, on the other, on the teacher, focusing on the teaching styles (Grasha, 1996), changing roles and new competencies and skills needed for the new environment, new communication strategies and new pedagogical/androgical approaches (Kemshal-Bell, 2001).

Staff development programmes and research on how to promote effective teaching are prominent in the literature (Oliver, 2004; Elgort, 2005).

However, there is a gap in the research literature in terms of the changing focus. As already pointed out in previous paragraphs, the emphasis on human beings in the teaching and learning process fails to recognise the importance of the some of the most important human features, namely the person attributes of the e-learning practitioner.

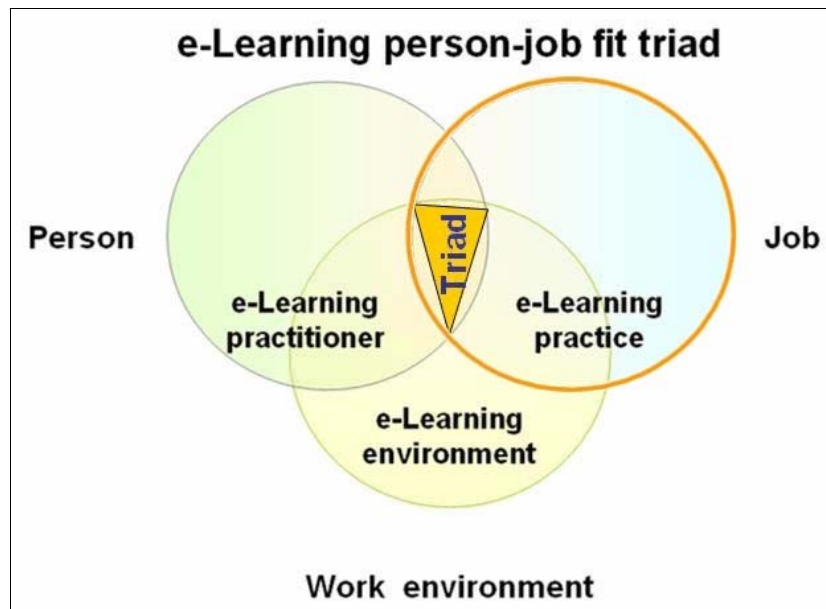
In **conclusion** it would be fair to say that e-learning is a complex and diverse field offering various options for practice in a variety of contexts. Organisations are on different levels with regard to the implementation of and innovation in e-learning, depending on the status of their technology adoption cycle. Therefore, the implications for this study are to position TUT in terms of the technology adoption cycle, and to describe the TUT e-learning context in terms of structuredness (see Chapter 1).

The next section provides an overview of the literature review on the fourth main focus area, namely e-learning practice, and will highlight relevant features of the e-learning practitioner system.

2.6.4 *e-learning practice*

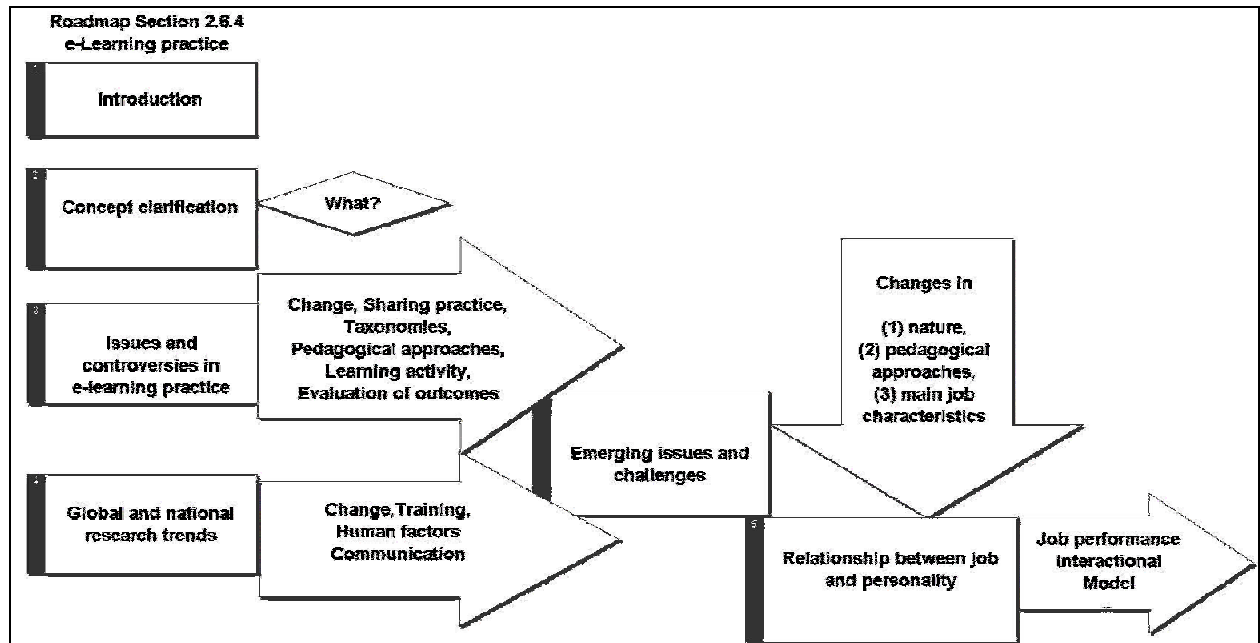
The fourth main focus area identified as relevant for this study is e-learning practice (e-learning job). Figure 2.8 graphically represents the position of e-learning practice in the e-learning person-job fit triad, which will be discussed in the following section.

Figure 2.8: e-Learning practice in the person-job fit triad



This section is structured in terms of the set layout structure for the sections as (1) introduction, (2) clarification of the concept, (3) issues and controversies in e-learning practice, (4) global and national research trends and reports on research done in this main focus area, (5) emerging issues and challenges, and (6) relationship between job and personality in e-learning (see Figure 2.9 for a graphical presentation of the layout structure of the section on e-learning practice).

Figure 2.9: Layout of the section on e-learning practice



2.6.4.1 Introduction

Trends and central issues that emerged from the literature review on e-learning practice in higher education relate to those identified in the e-learning domain (discussed in section 2.6.3.4), but show distinct clusters around the topics on the impact of continuous change on e-learning practice, practice development approaches, designing for effective learning and benchmarking of e-learning practice (Bennet *et al.*, 1999; Archer, 2002b; Bacsich, 2005). The importance of coping with change and the implementation of professional development and staff training as supportive measures for e-learning practitioners to cope with the increasing and changing job demands is evident from previous discussions. These issues are also prominent in the e-learning practice literature (Brennan *et al.*, 2001; Donnelly & O'Brien, 2005).

The use of practice models, case studies and scenarios by communities of practice are suggested as practical interventions for alleviating pressure from job demands on e-learning practitioners (JISC, 2004a). Another suggestion for enhancing effective learning is an adaptation strategy that provides for different pedagogical approaches with an emphasis on designing for learning (JISC, 2004a; JISC, 2004c). Complying with job demands from a job that is fast changing may sometimes result in output that lacks the required standards, therefore benchmarking becomes a crucial intervention in e-learning practice. This is not only important for maintenance of quality standards on service output but also for job positioning during the process of job redesign. Although various models, for example the Job Characteristic Model (Hackman & Oldham, 1975), the Two-Factor Model (Iacocca, Schumacher & Li, 1995:1) and socio-technical systems (Badham, Clegg & Wall, 2000), are available for job analysis and job redesign and are frequently mentioned in the sphere of organisational psychology (Parker &

Wall, 1998), the researcher found that research studies pertaining to job analysis in the domain of e-learning are few and far between. Job analysis and redesign in the e-learning environment are fast-changing, dynamic processes and therefore the researcher is of the opinion that there is a need for frequent revisiting.

The above-mentioned trends and issues are important for this study in terms of **providing a holistic view on the main e-learning practice** focus area and also for accomplishing the four literature review purposes as proposed by Creswell (1994:20) (see section 2.3).

Studying the above-mentioned trends and issues also revealed a number of assumptions, errors of reasoning and probing questions regarding the main e-learning practice focus area. My observations in this regard are presented in Table 2.5.

Table 2.5: Observations regarding trends and issues in e-learning practice

What are the assumptions of the trends and issues in e-learning practice?
e-Learning practitioner support is needed to empower e-learning practitioners to cope with changing job demands.
Interventions such as professional development and staff training programmes may meet the support needs of e-learning practitioners.
Interventions such as professional support provided by colleagues as members of communities of practice may contribute to the development of e-learning practice.
Adaptive strategies for pedagogical approaches may enhance learning but will also impact on the nature of the e-learning job practice.
What are the errors of reasoning?
Support interventions are sufficient to combat job demands: The importance of professional development and staff training as support interventions for e-learning practitioners is stated in the majority of studies on e-learning practice (Salmon, 2003; Oliver, 2004; Sharpe, 2004; Elgort, 2005). Job demands and job characteristics are mentioned as important influences on the e-learning practitioner (Nichols & Anderson, 2005). However, there are certain contradictions in this line of reasoning. Little reference in the literature is made to ways in which training and staff development programmes accommodate the special job demands and job characteristics of the e-learning practice in their programmes. Evidence of recognition of the importance of the influence of motivational

**Table 2.5: Observations regarding trends and issues in e-learning practice
(continued)**

<p>characteristics of the job or the effect of interactional personality trait activators on e-learning practice was not available. I also could not find any evidence of acknowledgement of the dynamic characteristics and changing profiles of e-learning practice interacting as a subsystem in the e-learning practitioner system. These aspects are usually ignored by developers of professional and staff training programmes. Few research studies (Sharpe, 2004; Oliver, 2004) mention formal job analysis as part of their intervention planning strategies. This may result in support programmes lacking certain important training components.</p> <p>Different models for job analysis and redesign suggest different approaches, for example the socio-technical approach to job redesign will follow a systems approach or the human job analysis will focus primarily on human aspects of the job. Therefore, aligning changing job demands, job analysis approaches, current e-learning trends and philosophical approaches becomes a daunting task. Following an integrated, holistic approach to e-learning practice redesign suggests team work and collaboration between organisational stakeholders. In the researcher's opinion, support programmes developed through the joint efforts of human resource management, staff development and e-learning support departments might be more successful than isolated, uncoordinated programmes.</p>
<p>The question remains ...</p>
<p>If we need job redesign in e-learning practice, should we not think holistically to accommodate the complexities of e-learning practice in a number of alternative job scenarios? Such an approach may well cater for the diverse job role distribution and the variety of work behavioural styles from the e-learning practitioners. Current research on e-learning does not provide sufficient answers to this question and seems to overlook the importance of human job analysis as an important aspect in the world of work. Furthermore, the literature review revealed a gap in the literature regarding formal studies done on the characteristics and profiles of the e-learning job.</p> <p>In this study I will argue that knowledge about the characteristics of e-learning practice (the e-learning job) and how these characteristics fit together in various profiles and job structures may contribute to our understanding of the e-learning practitioner construct (research question 2).</p>

It is important to note that the concept of 'e-learning practice' is covered by the umbrella concept of 'e-learning' discussed in the previous sections of this chapter, therefore the following paragraphs will not reiterate the e-learning story, but will only highlight the specific e-learning practice research trends, issues and controversies important for this main focus area.

2.6.4.2 Clarification of the e-learning practice concept

Looking at the **e-learning practice** concept may provoke a number of "what" and "how" questions; however, because of the complex nature of this concept answers to these questions are also complex. Conceptualisations of 'e-learning practice' differ widely given the different target groups, aims, functions, learning theories, models applications and e-learning tools involved. However, the fundamental concept universally applicable is 'learning'. Beliefs and theories about learning will colour views on e-learning practice, therefore the discussion on the nature of e-learning practice will only touch on the most important aspects taken the fact that it is beyond the scope of this study to give a comprehensive account of the various learning theories and models that influence thinking on e-learning practice. The researcher drew ideas from the extensive research work done by the Joint Information Systems Committee (JISC) in the United Kingdom to illustrate some of the concepts under discussion. JISC promotes the development of national and international standards for effective e-learning in collaboration with partner agencies (JISC, 2004a:ii). Another valuable source in this regard is the work done by the National Centre for Vocational Education Research (NCVER) in Australia. One of its aims is to provide quality, independent information about vocational education and training (VET) in Australia.

2.6.4.2.1 What is e-learning practice?

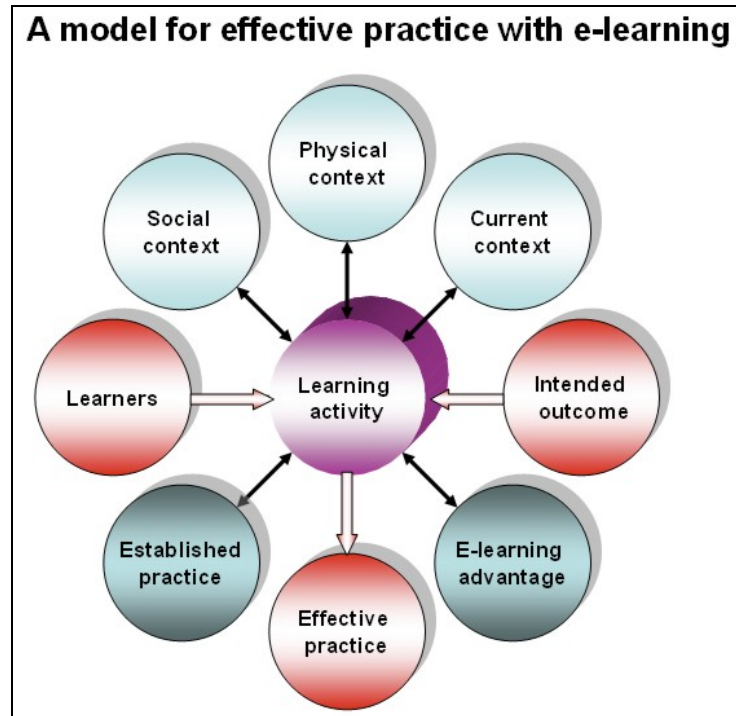
Combine e-learning options with the best of established practice and the practitioner has greater capacity to create an exciting and meaningful learning experience (JISC, 2004a:19).

Established e-learning practice applies e-learning tools to "demonstrate pedagogically sound, learner-focused and accessible activities" (JISC, 2005). Defining e-learning practice, JISC (2004a) states that the art of e-learning practice implies the e-learning practitioner as a creative role player, who engages in a process which involves "identifying objectives, recognising the needs of the learners, selecting the most suitable approach and then striking a balance between e-learning and other modes of delivery" to guide the learner to (1) become 'engaged in the learning process'; (2) develop 'learning skills'; (3) 'develop [their own] skills and knowledge'; (4) become a life-long learner' (JISC, 2004a:10-11). Therefore the e-learning job has to do with how one teaches in the e-learning work environment.

2.6.4.2.2 How is e-learning practised?

Taking a step towards define effective e-learning practice and to demonstrate the 'how?' of e-learning practice, JISC (2004a:49) presents a model that illustrates effective practice (see Figure 2.10).

Figure 2.10: A model for effective practice in e-learning (adapted from JISC, 2004a:49)

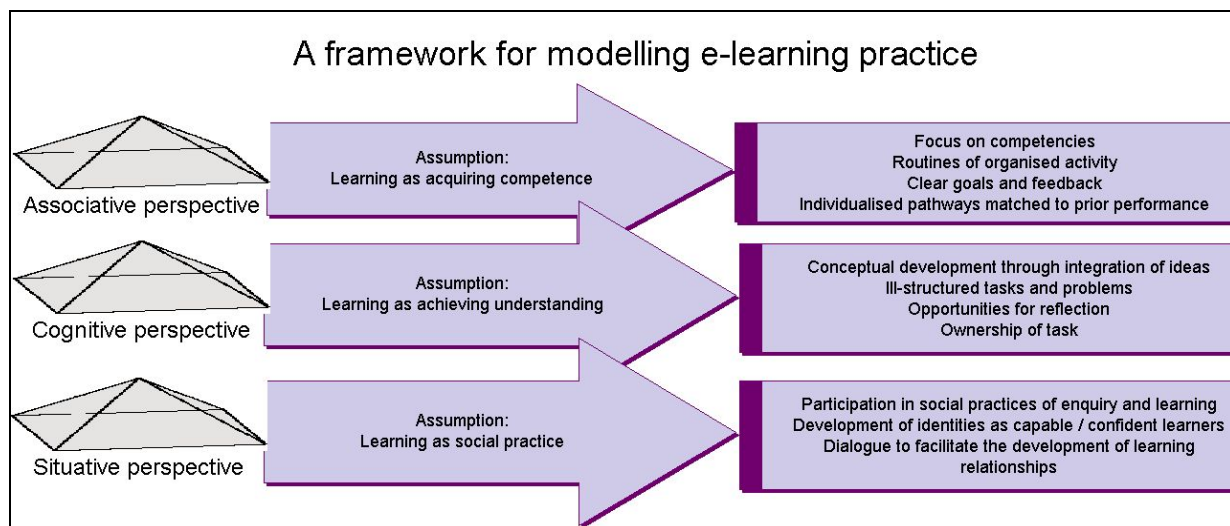


“A model for e-learning would need to demonstrate on what pedagogic principles the added value of the ‘e’ was operating” (Mayes & de Freitas, 2004:4), therefore the application of e-learning models suggests careful consideration of the specific e-learning advantage in a given situation. By combining a variety of e-learning choices with established practice, the capacity to create stimulating and meaningful learning experiences will be enhanced (JISC, 2004a:19). According to Mayes and de Freitas (2004:4), “models of e-learning [are] only enhancements of models of learning” and in their review of e-learning theories, frameworks and models, they are of the opinion that when e-learning approaches are implemented one has to take the underlying perspectives into account.

Embracing the theme ‘designing for learning’, the pedagogy strand of JISC’s (2004d) e-learning programme developed a framework to guide and support e-learning practitioners in the application of new e-learning tools for designing and delivering their own learning activities (JISC 2004d:2). Mayes and de Freitas (2004) used the developed framework and followed the approach of Greeno, Collins and Resnick (1996) to identify three broad theoretical perspectives on the nature of learning. Assumptions that they outlined were: “Associative (learning as activity); Cognitive or Constructive

(learning as achieving understanding) and Situative (learning as a social practice)” (Mayes & de Freitas, 2004:7). They propose a “mapping matrix which links the associative, cognitive, and situative perspectives with implied pedagogies, teacher and learner roles, learning tasks and learning activities” (Smart, 2005). e-Learning practitioners “could use the matrix as a planning tool where teachers could be guided from the theoretical approach through the associated pedagogies to detailed plans about delivering a particular teaching session” (Smart, 2005). Figure 2.11 summarises the framework example of Mayes and de Freitas (2004), showing how they mapped theoretical perspectives onto formal descriptions of practice approaches (practice models) to develop the framework for modelling e-learning practice.

Figure 2.11: A framework for modelling e-learning practice (adapted from the work of Mayes & de Freitas, 2004:13; JISC, 2004a:13; JISC, 2004d:4)



The movement away from traditional approaches and the emphasis on the social aspect of e-learning is apparent from this framework. As described in previous paragraphs on the evolution of e-learning (see Appendix B1), the ‘what’ and ‘how’ of e-learning practice have changed, which has implications for e-learning practice in terms of adapting to job changes, new pedagogical approaches and new skills and knowledge needed to fulfil the job tasks.

Implications for this study

Understanding the changing nature of e-learning practice and consequent changing job characteristics is most important in the study of the e-learning job as a living subsystem in the e-learning practitioner system. These changing job characteristics may impact directly on the interrelationships between the job and the person subsystems. Likewise, these dynamic interactions are influenced by environmental e-learning input, culminating in a variety of output scenarios.

Therefore, to gain a holistic view on the possible outcomes of these interactions, it is important to start not only with a critical analysis of complementary and relevant research studies, but also to conduct a thorough investigation regarding the characteristics of the job (input system) to frame and contextualise these job characteristics. The following paragraphs will comment on important contextualising research trends, issues and controversies regarding e-learning practice.

2.6.4.3 Issues and controversies regarding e-learning practice

Institutions should develop frameworks for professional development in which the skills and knowledge to develop e-learning plays an integral part of everyday practice (Attwell, 2004:61).

A number of key issues for **effective e-learning practice** are highlighted by authors such as Beetham (2004a) and Mayes and de Freitas (2004) as: (1) keeping up the momentum of innovative change (momentum may be enhanced by describing and sharing effective practices by using scenarios and case studies); (2) the use of standards-based representations; (3) the development of metadata and taxonomies; (4) the use of a variety of pedagogical approaches, therefore choosing and supporting different pedagogical approaches and design practices to accommodate different teaching and learning needs; (5) consideration of implementation issues such as “efficiency vs. effectiveness; costs; quality assurance; tutor/student ratio; staff development; student support; technical support and management support” (Mayes & de Freitas, 2004:23).

Judging e-learning practice as effective or not can be based on the same criteria as judgements about effective practice in learning generally; however, in a survey done by Brennan (2003a) the participants felt that e-learning practitioners should transfer principles of good practice to the online environment (Brennan, 2003a:42). Examples of ‘good’ practice cited by JISC (2004a) and Brennan (2003a) suggest themes such as (1) student learning; (2) Interpersonal skills; (3) organisational principles; and (4) practical networking (Brennan, 2003a:45) and that the practice should

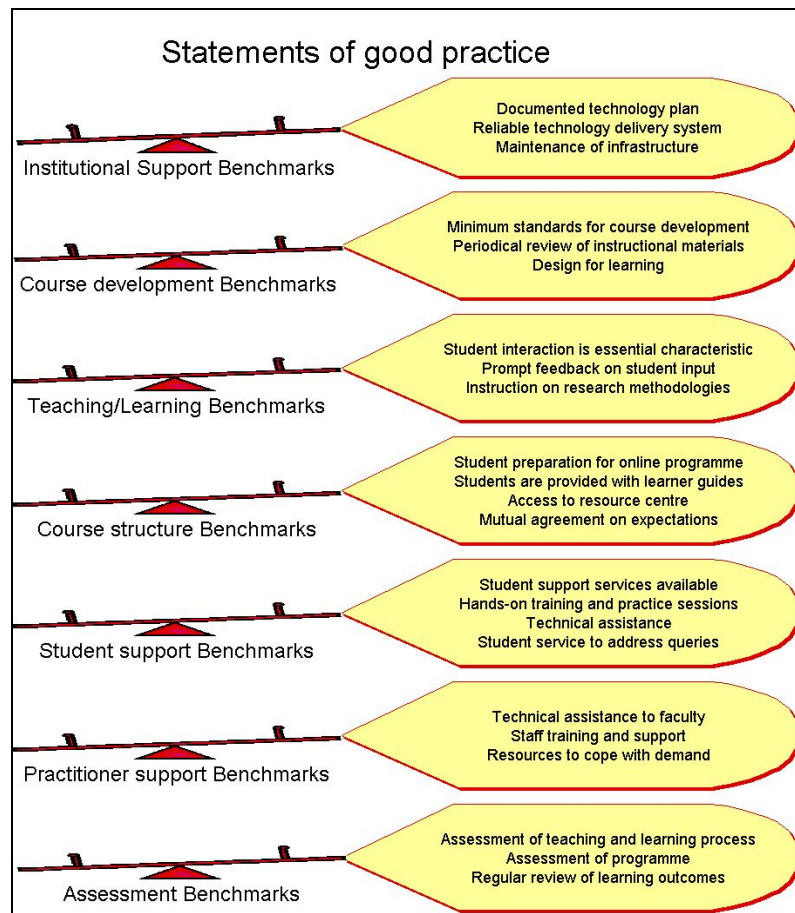
- “engage learners in the learning process” (JISC, 2004a:10), encouraging them to taking personal responsibility for their learning;
- begin with pedagogical considerations;
- focus on communication and interaction;
- engage in continuous improvement, innovation and evaluation;
- “encourage independent learning skills” (JISC, 2004a:10);

- develop learners' skills and knowledge, and
- “motivate further learning” (JISC, 2004a:10).

Evident from the above-mentioned themes is the central assumption that effective e-learning practice is a social event and that if e-learning options are combined with best practices the practitioner has the opportunity to create stimulating teaching and learning environments for the learners (JISC, 2004a). However, benchmarking e-learning best practices is still in a development phase and is not globally established at present. Initiatives in this regard focus mainly on work done in the UK, US, Europe, Australia and New Zealand (Bacsich, 2005:1-2). Bacsich (2005) has developed a benchmark taxonomy that includes factors such as adoption phase (Roger, 1995); virtual learning environment stage; information learning technology-like phase; tools use; accessibility; instructional design/pedagogy; training; organisation; technical support and staff recognition for e-learning.

Frameworks such as the one illustrated in Figure 2.11, direct “practitioners towards examples of good practice” (JISC, 2004d:6). Consultation with e-learning practitioners reveal that they experience the need for not only a “common framework for describing practice”, but also “guidance tools to support designing for learning”, the support from “communities of practice” and “good practice examples” (JISC, 2004d:6-7). A number of success indicators in this regard are listed in a literature review on ‘Theory of benchmarking for e-learning’ by Bacsich (2005:29). He lists 24 statements of good practice from a study done by C (2000) as *inter alia* practitioner support and teaching and learning benchmarks (see Figure 2.12).

Figure 2.12: Statements of good e-learning practice (adapted from the work of Phipps & Merisotis [2000] in Bacsich, 2005:29)



Although work on quality and good practice can be transformed and set up into benchmark criteria (Bacsich, 2005:1), adaptations in this regard are not relevant for this study and therefore will not be discussed here. Likewise, development opportunities for e-learning practitioners complimented by a number of practical interventions, for example 'professional learning', 'communities of practice', and 'learning design' (JISC, 2004d:8) will not receive detailed reports in this particular study.

Controversial issues cluster around the problem of (1) "applying old solutions to new problems in the world of online learning" and the view that (2) these applications tend to produce results that are "as good as" what we have done before (Twigg, 2001:5). "Effective e-learning, however, requires rethinking of the traditional teaching and learning paradigms in a way that allows teachers to create effective environments to facilitate learning" (Elgort, 2005:2). The issue of change always provokes a number of opposing views and, as already discussed in section 2.6.3.7.1, changing e-learning practice is not a seamless process. Sharpe (2004) has reviewed interventions that have proved to be successful in changing practice and one of her recommendations is "to train more staff developers as e-learning specialists to encourage dialogue within the context of their own institution" (Oliver, 2004:2). Oliver (2004) elaborates on

this line of thought and comes to the conclusion that “different forms of support are needed in response to varying patterns of need, interest and institutional pressure and that it is important that institutions develop a broad repertoire of approaches to support so that staff can gain access to what they need, when they need it” (Oliver, 2004:33).

Nichols and Anderson (2005) raise the concern that e-learning environments at many institutions are ad hoc in the sense that the early-adopters may utilise learning management system applications whilst the majority of academic staff lag behind. This results in a “strategic challenge to tertiary institutions in terms of how to engage the large majority in appropriate e-learning practice without restricting the early-adopters and innovative approaches” (Nichols & Anderson, 2005). To address this issue, Nichols and Anderson (2005) suggest a coordinated approach to development and change in the system, and propose a model of “core and custom pedagogies”. The adoption of core practices may cater for the large majority, whilst custom practices may provide the flexibility needed by the innovative group of practitioners.

Important for this study

The above-mentioned issues are relevant for this study in terms of the e-learning context at TUT. The e-learning environment is a major role player in the triad of person-job-environment fit. At TUT the e-learning work environment consists of a combination of ad hoc (unstructured) and structured (P@W programme) environments.

Trying to keep up the momentum of innovative change, sharing effective practice and applying a variety of pedagogical approaches and design practices to accommodate different teaching and learning needs are some of the challenges that are also prominent in the TUT e-learning practice environment. A variety of environmental “job” scenarios at TUT implies a variety of relationships in different contexts influenced by different situational features.

2.6.4.4 A snapshot of global and national research trends in e-learning practice

In this study the literature review of current global research interest in the e-learning practice domain revealed a number of major trends, namely (a) **e-learning practitioner support, training and staff development**; (b) **developing e-learning practice**; (c) **designing for e-learning**; and (d) **benchmarking e-learning practice** (Brennen, 2003a; Mayes & de Freitas, 2004; Oliver, 2004; Sharpe, 2004; JISC, 2004a; Bacsich, 2005). These will now be discussed.

Australian e-learning practitioners agree with the practice models designed by Mayes and de Freitas (2004) in terms of their assumptions that online learners are self-regulated, self-motivated, confident with the medium, have strong levels of persistence and high levels of

critical information literacy (Brennen, 2003a:6-7). Therefore to cope with demands from these learners and e-learning practice, the need for e-learning practitioner **support, training and staff development** is not only cited in numerous e-learning teaching and learning strategies, reports and articles, but is also voiced by practitioners themselves (Beetham, 2004a:1). The plea for practitioner support in their everyday practice is a universal need noted by numerous authors, researchers, official reports and policies (Oliver, 2002; Browne & Jenkins, 2003; LTRI, 2004; Sharpe, 2004; Beetham, 2004a; Education: the promise of America, 2004; Nichols & Anderson, 2005; ICT06, 2005). In response to their plea, proposed frameworks for describing e-learning practice, such as the one from Mayes and de Freitas (2004), could be useful to practitioners. Other support strategies may include building knowledge and practice communities, sharing best practices and using e-learning practice case studies and scenarios as examples from which to learn (JISC, 2004d).

Research done by the e-learning and pedagogical strand of JISC identifies three key processes that needed to be supported, namely “representation and sharing knowledge, supporting people to do something new or different, and supporting change in communities of organisations” (JISC, 2004d:8). They also propose a set of six principles for effective interventions in practice (JISC, 2004d:8). These principles were identified as usability, contextualisation, professional learning, communities, learning design and adaptability (JISC, 2004d:8). Using these principles, Sharpe (2004) created a typology in an attempt to identify effective interventions that support e-learning practice. The typology maps the principles of effective interventions onto the three key processes mentioned above (Sharpe, 2004). Application of such typologies and taxonomies may prove useful in the design and development planning of interventions to support e-learning. However, further investigation of the application of practical interventions to support e-learning practice will not be included in this study but may be explored in future research initiatives.

Developing e-learning practice also involves the evaluation of new approaches. Dempster (2004) proposes a framework for reflection to share practice and to develop good practice. Dempster (2004) states that hopefully “e-learning will [eventually] become a normal part of university practice over time and that [learners] will arrive expecting e-tools and practices to be in place to enhance and support their learning”. Martin Oliver of the University of London argues that as long as e-learning is treated as an add-on, rather than a mainstream activity, teachers will not eagerly engage in e-learning activities (Oliver & Dempster, 2002).

e-Learning should be seen as part of the total pedagogic approach of the organisation, rather than as an add-on or alternative to traditional teaching and learning practices (Attwell, 2004:62).

Research initiatives in the UK, Europe and Commonwealth countries (Salmon, 2003; JISC, 2004a; LTRI, 2004; Elgort, 2005) have intensified focus on e-learning practice, the use of social software and **designing for e-learning**. To bring about effective learning, the learner has to be actively engaged in the teaching and learning process and the practitioner has to make choices about learning activities and the design of these activities. Salmon's (2003) research on *e-tivities* and *e-moderating*, which resulted in a five-step model for e-learning practice, is an excellent example of merging theory and practice. Practice models can be described as approaches to implement pedagogical principles in everyday practice (Mayes & de Freitas, 2004; Beetham, 2004a) and have proved to be instrumental in the successful implementation of e-learning (Gunn, 2001; JISC, 2004a).

Using the technology adoption cycle framework of Zemsky and Massy (2004) and Mackintosh (2004) to **benchmark e-learning practice** in the UK, it is evident that there is widespread adoption of VLEs and tools (Browne & Jenkins, 2003 (UCISA), 2004; DfED, 2004). The huge financial, research and teaching and training investments in the field of designing for learning suggests that e-learning practice in the UK is moving towards the third and fourth adoption cycles. My observation is supported by Elgort's (2005:3) reflection on research studies and statistics, stating that universities in New Zealand, Australia and the UK have passed the 16 percent threshold of early adoption of e-learning technologies. She is of the opinion that one reason for the rapid pace of adoption is the introduction of learning management systems, home grown systems or open source such as Moodle. Easy-to-use learning management systems have reduced the steep learning curve and opened up usability beyond the levels of the innovators and early adopters. In the early 90s the majority of teachers involved in e-learning were innovators and early adopters (Elgort, 2005:3). In contrast, the JISC report (JISC, 2004a:1-2) states that inability of VLEs to support innovative learning activities, the demand from e-learning practitioners and the strategic push from formal programmes have created a climate for innovative change in terms of designing for learning and a movement towards the use of social software and the development of communities of practice.

Although taxonomies, frameworks/models and guidelines are essential to support practice, benchmarking of e-learning as a self-evaluation, self-improvement process is of the utmost importance in enhancing quality standards. In a recent study on benchmarking in e-learning, Bacsich (2005:4) found that few higher education organisations have done much work on benchmarking. His study titled *Theory of benchmarking for e-learning: a top-level literature review*, includes data from the higher education and further education sectors in the US, Australia and the Commonwealth countries (Bacsich, 2005). Findings from Bacsich's study reveal that benchmarking in higher education institutions is (1) aimed more at administrative

processes; (2) that useful work has been done in the further educational sector in the UK; and (3) that a considerable amount of higher education work in the US has been done on quality and good practice in e-learning which can be transformed into benchmark criteria (Bacsich, 2005:1). Bacsich (2005) comments on a number of methodologies available for benchmark development and concludes by presenting (in my opinion) an extremely useful taxonomy titled 'Benchmark taxonomy'. Using this taxonomy the user is enabled to acquire a profile of the e-learning practice by plotting the relevant data on a matrix. Although this taxonomy was not utilised for this study, benchmarking may be considered a useful tool for the analysis of effective e-learning practice.

Implications for this study

Good e-learning practice illustrating the 'how' of doing the job is important for this study in terms of benchmarking human job analysis. Benchmarking criteria were used to identify the star performer group at TUT (see sections 3.8.1.8 and 3.8.4).

Research findings pertaining to e-learning practice on a national level reveal that studies done at the Universities of Stellenbosch and Pretoria benchmarked them in terms of the e-learning adoption cycles. Van der Merwe (n.d.) concludes that the implementation of WebCT at the University of Stellenbosch was a "huge success as an evolutionary process driven by mainly innovators, the early adopters and the early majority user groups as defined in Rogers' theory". She further reports that although faculty members and top management are convinced that e-learning is already a priority on campus, there is a need for support structures, as well as appropriate teaching and learning strategies, to be in place to gain sustainability.

The Department of Telematic Education and Innovation at the University of Pretoria, South Africa, implemented WebCT in 1997 as a learning management system. Le Roux (n.d.:1) uses a hype cycle to describe the implementation path that the University followed to reach a certain level of productivity on the pedagogical and technical levels. Different challenges are mentioned, for example the use of online tutors to complement online facilitation and action research on best practices in terms of innovative learning design to attain meaningful productivity. These challenges concur with situations in Southern African as well as other regions worldwide (Czerniewicz & Carr, 2005:3). Czerniewicz and Carr (2005:3), from the University of Cape Town in South Africa, suggest that the "effectiveness of educational researchers and practitioners in our region requires the growth of effective communities of practice".

The e/merge 2004 is an excellent example of capacity-building initiatives. This online conference aimed at "strengthening communities of practice" in the Southern African region by

creating a platform for sharing good practice and knowledge about e-learning innovation within the tertiary and secondary educational sectors (Czerniewicz & Carr, 2005:8). Sharing case studies and scenarios as examples of e-learning practice is becoming a useful support tool for communities of practice to build capacity towards effective e-learning practices and to give new perspectives for research.

2.6.4.5 Emerging issues and challenges in e-learning practice

After an intensive review of the literature on e-learning practice, I came to the conclusion that most of the issues and controversies in this field, as is the case for the e-learning work environment, are underpinned by the fundamental issues surrounding 'change'. To illustrate this, changes in the nature of e-learning, in pedagogical approaches, and in the relationship between the job and personality are briefly described in the following paragraphs.

2.6.4.5.1 Changes in the nature of the e-learning job

Given the rapidity of change in programs, techniques and equipment, it is not surprising that we find it hard to deal with. We simply don't have the skills to deal with such big changes so quickly (Brennan, 2003a:29).

As mentioned in preceding paragraphs, the provision of practice models, frameworks and taxonomies to support e-learning practitioners is one of the current challenges for e-learning practice. Practitioners' decision making is influenced by usability; "environmental aspects; educational effectiveness and personal engagement" (Collis, 2000), therefore the modelling frameworks should be useful to practitioners in making key decisions about the overall approach to learning and the choice of learning activity (JISC, 2004d:2). Although different teaching and learning representation forms, for example datasets, guidelines, pro-formats, standard vocabularies and taxonomies, are available in the e-learning environment, there is a need for representation in a variety of contexts (JISC, 2004d:2). The "art of teaching" has not changed in terms of the teaching practice being underpinned by "intuition, sensitivity and care" but definitely in terms of new skills needed and rapid technological changes (Brennen, 2003a:7). Furthermore, the availability of a vast number of different technologies and the pace of technological change may discourage e-learning practitioners who may feel **unable to cope with change**. What are the consequences if the job is characterised by frequent change, but the profile of the person doing this job is one of 'resistance to change'? Is there a way to influence the job profile so that the effect of change or the unstructured nature of the job can be minimised?

2.6.4.5.2 Changes in pedagogical approaches

According to Hase and Kenyon (2000), adult online education (androgogy) is now moving into a learning space called heutagogy, meaning self-determined learning (Hase & Kenyon, 2000:2). Approaches embracing these applications are rooted in the humanistic paradigm, which emphasises the humanness in human resources. Hase and Kenyon (2000) pose the question as to whether learners are ready to take this responsibility and whether teachers are prepared for such a shift. Changing approaches to teaching and learning and specifically e-learning will always impact on the educational process and the challenge for e-learning practitioners is to make their theories and beliefs explicit, to critically evaluate them and to test different approaches (Elgort, 2005:2). Staff development programmes can provide the necessary support to empower e-learning practitioners (Sharpe, 2004:1).

2.6.4.5.3 What are the main job characteristics of e-learning practice?

Brennen (2003a:27) identifies some of the e-learning practice characteristics important for effective practice as technological acumen, active learners, flexibility, high levels of intrinsic motivation, high levels of teacher 'goodwill', problem-based learning, independent learning, adult learning and teaching styles, literacy skills beyond a functional level and persistence. The level of effectiveness of teaching and learning styles in the online environment is determined by four factors: (1) "practitioner and student experience; (2) the availability of time; (3) online teaching practices e.g. teaching styles based on interaction; and (4) literacy skills" (Brennen, 2003a:26). Responding to a question about the nature of their everyday online practices, Australian practitioners' answers included the development of content, instructional design, use of email, bulletin boards, listserv, chat rooms, the use of case studies, role plays, games, lecture notes, online assessment, providing feedback and mentoring, and web surfing (Kemshal-Bell, 2001:36).

Under the title *Understanding your practice*, JISC (2004a) gives a sample guide to e-learning practice. Included in this guide is a list categorising (1) "learning activities, (2) established practice, (3) examples of e-learning practice and (4) e-learning advantage" JISC (2004a:44-47). A number of "job" characteristics are prominent on this list, namely the "practitioner

- facilitates learning pathway chosen by learner;
- as expert scopes the learning domain and provides essential resources;
- as facilitator stimulates and mediates discussion generated by learners in reaction to online resources;
- as facilitator creates and manages resources for learners;
- and learners share role of assessors of learning;
- acts as content developer and facilitator of learning;

- instigates discussion to be taken over by learners and extended beyond class contact time;
- may still act as monitor and assessor;
- facilitates learning by devising interactive learning activities;
- inducts learners in the use of software and identifies learners who require additional one to one support, and
- devises tests and activities and provides supporting resources” JISC (2004a:44-47).

Important for this study

Although the job characteristics listed above (Kemshal-Bell, 2001; Brennen, 2003a; JISC, 2004a), represent a wide range of choices by participants in that particular study, it is important to keep in mind that the concept 'job characteristics' used for this study focuses on the human job in terms of work behaviour styles, which suggests a very specific approach emphasising the relationship between job and personality attributes. However I could not find any studies in this regard.

2.6.4.6 Relationship between job and personality

To introduce the concept of '**job characteristics**', a brief discussion on the relationship between job and personality may contribute to the contextualisation of the concept. Meta-analyses have shown that personality measures can predict job performance fairly well under certain conditions (Salgado, 1997:30; Tett & Burnett, 2003:500). Investigations and research in this area are largely due to the emergence of the five-factor structure of personality motivated by the discovery of traits related to performance in selected jobs (Barrick & Mount, 1993; Tett & Burnett, 2003:500). During the late 1980s trait-versus-situation debates crystallised “understanding of how to predict behaviour from traits” and resulted in personality research involving the “specification of a personality taxonomy, a job performance taxonomy and hypothesised relationships between them” (Johnson, 2003:84), illustrating the advantage of using personality taxonomies as organising frameworks to reveal personality-performance relationships.

During the 1990s the focus was on meta-analysis of the relationship between personality and performance (Johnson, 2003:84). Arguments about the validity influence of personality on job performance and job satisfaction and the relationship between them have “moved beyond the search for significant correlations between the Big Five dimensions and general measures of job performance” (Johnson, 2003:84). The current focus is directed more towards understanding the nature of personality and job performance, and how they are linked, and issues about the influence of moderators and mediators on these relationships (Barrick & Mount, 1993; Johnson, 2003:84; Ruijter, 2005).

Important for this study

Although the study of job performance, job satisfaction and personality traits is not the focus of this study, clarification and understanding of these concepts in terms of their relevance to work personality, work behavioural styles, job analysis and job redesign are important to (1) contextualise the discussion on the relationship between the e-learning practitioner, e-learning practice and the e-learning environment and (2) to enhance understanding of situational trait activation.

Different views on job performance reflect a number of approaches, for example Johnson's (2003:88) taxonomy of job performance, which contains three levels, namely "task performance", "citizenship performance" and "adaptive performance" (Johnson, 2003:94-95). Campbell's view on job performance is described by Johnson (2003:97) as a function of three determinants: declarative knowledge, procedural knowledge, and skill and motivation. Different combinations of these determinants have a direct influence on performance in a job dimension. Reward systems, training and management practices are examples of indirect determinants provided by the organisation, whilst personality is an indirect determinant that the individual brings to the organisation (Johnson, 2003). Different models on performance determinants provide explanations of "how individual differences in personality translate to individual differences in job performance on a particular dimension" (Johnson, 2003:98). Motowidlo, Borman and Schmidt (1997 in Johnson, 2003:101) use the concept 'work habits' to replace the motivation component generally used in job performance models as an "important mediating variable between personality and job performance". They define work habits as "stylistic ways that people handle different kinds of situations that occur on the job, learned as their basic tendencies/personality traits interact with their environment" (Motowidlo *et al.*, 1997, in Johnson, 2003:101).

Although the personality traits 'self-esteem', 'neuroticism' and 'locus of control' have been the subject of more than 50 000 studies, limited attention has been given to the relationship between these traits (Bono & Judge, 2003:S6-S7). In recent years a growing body of literature has examined the relationships between core self-evaluations with the aim of describing their relationship to job satisfaction and job performance (Bono & Judge, 2003:S8). Findings by the authors mentioned indicate that the core self-evaluation traits show "patterns of relationships with other Big Five traits " and are predictors of both job satisfaction and job performance (Bono & Judge, 2003:S13). They conclude that the traits mentioned are interrelated and therefore research on these traits should be integrated.

Various researchers have identified moderator variables that may influence the extent to which personality predicts performance. A meta-study of the relationship between personality measurement and job performance in South Africa by Van der Walt, Meiring, Rothmann and Barrick (2002) identifies the level of education as a moderator. In a notable study by Barrick and Mount (1993), they investigated the moderating role of autonomy on the relationships between the Big Five personality dimensions and job performance. One of their findings was that autonomy and situational strength are not identical constructs but the amount of job autonomy is a “reasonable proxy for conditions that permit (weak situations) or inhibit (strong situations) individual differences in personality to be expressed” (Barrick & Mount, 1993). Interactionist theories developed in reaction to the “trait *versus* situation debate” recognise that individual behaviour is influenced by both personal traits and situational context (Haaland & Christiansen, 2002). Barrick and Mount (1993) cite various researchers who argue that situational strength, either weak or strong, moderates the relationship between personality characteristics and behaviour. “Weak situations are those in which there are few demands to conform to the situation and strong situations is the opposite where persons are restricted in the range of behaviours to exhibit” (Barrick & Mount, 1993).

Strength as well as relevance to the situation of the trait of interest are two distinct situational characteristics useful for understanding how traits relate to patterns of behaviour (Haaland & Christiansen, 2002; Tett & Burnett, 2003:502). Trait activation theory suggests that “situations activate the expression of traits when they provide trait-relevant cues” (Wilson & Witt, n.d:9) and the trait activation process follows when individuals express their traits when presented with “trait –relevant situational cues” (Tett & Burnett, 2003:502). Tett and Burnett (2003) propose a model that distinguishes between five situational features relevant to trait expressive work behaviour pertaining not only to relationship strength but also to direction. The person-situation interactionist model of job performance may be useful for specifying the “conditions under which particular personality traits will predict performance in particular jobs” (Tett & Burnett, 2003:500). The relevance and usefulness of their model to this study are discussed in the following paragraphs.

2.6.4.6.1 Personality trait-based interactionist model of job performance

Application of the person-situation interactionist model of job performance targets a more **useful utilisation of personality information** in the work environment and offers a “framework for further study of personality traits in practical pursuits” (Tett & Burnett, 2003:501). Tett and Burnett (2003) define personality traits as “intraindividual consistencies and interindividual uniqueness in propensities to behave in identifiable ways in light of situational demands” (Tett & Burnett, 2003:502). From this definition, which is consistent with person-situation interactions, a number of points relevant for this study are:

- “intra-individual consistencies [work behavioural styles] – allow predictions about future behaviour on the basis of past behaviour;
- as propensities, traits [person characteristics] are latent potentials residing in the individual; understanding what triggers them is critical for understanding the role of personality in the work place;
- trait [person characteristic] inferences are interpretations of overt behaviour;
- understanding trait [person characteristic] expression calls for consideration of relevant situational features” (Tett & Burnett 2003:501);
- person-job fit can be moderated by certain personal or job characteristics, and
- the person-situation interactionist model of job performance provides a framework for investigating situational issues in person-job relationships under study.

Shifting the focus to the **process** of person-situation interaction, the model proposed by Tett and Burnett (2003) integrates several relevant assertions, for example traits are expressed in work behaviour as responses to trait-relevant cues; sources of cues can be grouped into task, social and organisational levels and trait-expressive work behaviour is distinct from job performance. This implies that work behaviours suitable for one job may not be ideal for another. The consequence of this assertion in terms of e-learning practice is firstly to know **what** work behaviours are suitable for the job and secondly to **differentiate** between the different job roles and career paths to optimise and utilise person-job fit to the advantage of the person and the organisation.

2.6.4.6.2 Situational features relevant to personality expression at work

Tett and Burnett (2003) mention “five situational features relevant to personality expression at work, these include job demands, distracters, constraints, releasers and facilitators” (Tett & Burnett, 2003:500). These situational features mentioned by Tett and Burnett (2003) are very important for this study, and are relevant in terms of **enrichment of the human job analysis**. They define job demands as generally formal job descriptions that may include informal group and organisational features (Tett & Burnett, 2003:505), for example an e-learning practitioner, who prefers a steady work pace and needs time to complete tasks, receives 60 e-mails from students to reply promptly to; job distracters that “interferes with job performance” (Tett & Burnett, 2003:505) for example during an online WebCT training session the Internet connection goes down and the e-learning practitioner who prefers stability needs to react to sudden changes; job constraints that restrict cues for expression (Tett & Burnett, 2003:505), for example the sociable e-learning practitioner who needs face-to-face contact with the students might be constrained in the expression of sociability if face-to-face contact with students is limited; job releasers that counteract constraints (Tett & Burnett, 2003:505), for example new knowledge about different online teaching and learning strategies activates the e-learning practitioner who needs to research every aspect of a situation and consider every possibility

before making a decision; and “[j]ob facilitators make existing personal characteristics more salient” (Tett & Burnett, 2003:505), for example personal support by the support team is energising for the e-learning practitioner who is concerned about relationships and teamwork.

Tett and Burnett (2003) provide a useful comparison of trait-relevant features along the three dimensions of activation status, behavioural value and frequency. They view “job demands, distracters and releasers as trait activators, constraints as de-activators and facilitators as amplifiers” of the effects of the other features (Tett & Burnett, 2003:505).

Implications for this study

As mentioned in the preceding paragraphs, understanding what triggers latent characteristics is critical for understanding the role of personality in the workplace (Tett & Burnett 2003:501). Investigating the e-learning practitioner construct involves not only the identification of the characteristics of the building blocks (person and job), but also the relationships between these building blocks to reveal the underlying structure. However, the e-learning practitioner construct structure has no meaning if it is not embedded in a context.

Furthermore the relationships of the person-job context are influenced by situational interaction. What becomes evident from the above discussion on interactionist theory and the person-situation interactionist model is the role of situational features in triggering responses. Aiming at a human job analysis for the e-learning practitioner, this study focused on three trait activators only, namely job demands, distracters and releasers, studied as positive and negative influences on person-job interaction. Job demands may vary across the different job roles, for example the task of writing scholarly articles may be a job demand for the e-learning practitioner playing the role of researcher but is not so prominent in the designer role: it may be at the high end of the compliance factor for the role of researcher but at the low end for the designer. The methodicalness (i.e. the detailed planning) desired for the role of manager may not be desired for the role of the innovator. To address the complexities of situational specificity and to make the most of person attribute data, one needs to know when these attributes “are desirable and undesirable within, as well as across job types” (Tett & Burnett, 2003:509). The rich job structure and the different types of job assignment in e-learning practice challenge us to use our creativity to apply “quantum solutions” (Shelton, McKenna & Darling, 2002) for the simultaneous optimisation of behavioural style diversity, job structure diversity and person-job fit.

Using the person-situation interactionist model provides a formal process for personality-oriented job analysis. Identifying on the task, social and organisational levels the “cues that the job provides for traits which expression is of some value to the organisation” (Tett & Burnett, 2003:509) provides definition for this process. Valuable input on job demands, distracters and

releasers by the e-learning practitioners themselves enriches the formal human job analysis process.

2.6.4.6.3 Personality-orientated job analysis

Job analysis has come a long way from an emphasis on task analysis to descriptions of systematic procedures for data collection on work behaviours that can be task or worker related (Harvey, 1991:72). Job analyses use positions and jobs as units of analysis, whereas the job holder frequently serves as a source of information about the position or job the person is not the unit of analysis (Harvey, 1991:80-81).

Specific orientations may direct the job analysis process towards selected job foci, for example personality- or trait-orientated job analysis to link job descriptions and the type of person expected to perform a job well. After the purpose of the job analysis has been defined, the next step in the job analysis process is to identify the core issues about the work to be done. Different taxonomies of job analysis methods, focusing on “nominal or dimensional categories” (Harvey, 1991:81), and “task- or person-oriented approaches” (Robinson, 2001) can be applied to assist in the choice of job analysis method (see Appendix B2 for a more detailed description of job analysis and job redesign).

In the fast changing world of work, job redesign is becoming more important to organisations and the focus is shifting towards customer satisfaction and empowering employees (Grobler, Wörnich, Carrell, Elbert & Hatfield, 2004:104). “The success of the organisation depends on its employees” (Grobler *et al.*, 2004:104) and therefore organisations should optimise on workforce benefits such as the behavioural style diversity of the workforce, person-job fit and cultural cohesion (Shelton *et al.*, 2002). This has the implication of recognising the individual’s needs and reinforcing positive motivational influences (Grobler *et al.*, 2004:105).

According to Boonzaier, Ficker and Rust (2001:14) and Parker and Wall (1998:13), the Job Characteristic Model (JCM) is considered the most influential, well-known and widely discussed theory of job redesign. Research initiatives pertaining to the JCM are more focused on quantitative analysis techniques not relevant for this study; however it has **triggered a process of analogue thinking**, with consequent job analysis and redesign implications that will be discussed in subsequent paragraphs.

Implication for this study

- Theme focuses evident from the empirical research on the JCM relate to “factor structure of the job characteristics and subjective, objective and additional job characteristics” (Boonzaier *et al.*, 2001:14).
- “Subjective ratings of job incumbents can be regarded as a sufficient and valid indicator of the extent of the job characteristics present in their jobs” (Boonzaier *et al.*, 2001:16).
- Energy wasted on frustrating environmental factors, negatively influences the relationships between the job characteristics and work behaviour (Oldham, 1976 in Boonzaier *et al.*, 2001).
- Depending on the purpose and context, job descriptions may vary from broad to precise descriptions applied in various situations by human resource professionals (Grobler *et al.*, 2004:89-90).
- “The success of the organisation depends on its employees” (Grobler *et al.*, 2004:104) and therefore organisations should optimise on workforce benefits such as the behavioural style diversity of the workforce, person-job fit and cultural cohesion (Shelton *et al.*, 2002). This implies recognising the individual’s needs and reinforcing positive motivational influences.
- Commenting on the research review conducted by Boonzaier *et al.* (2001), the authors conclude by saying that “according to these criteria, three dominant sets of variables constitute the world of work, namely the characteristics of the job, characteristics of the worker and characteristics of the work environment” (Boonzaier *et al.*, 2001:23).

The ideas embodied in the above statements have inspired various reasoning and thinking processes. Analogue thinking was applied to link the human job analysis (HJA) and the person-situation interactionist model to the JCM resulting in the conceptualisation of an enriched HJA.

- HJA techniques were selected for analysing a job that does not formally exist: the resulting job description provides a broad holistic overview of the job scope, characteristics and structure. The aim of the study is not to design a job description for e-learning practitioners but to explore the job characteristics and their relationships in the job structure.
- The enriched HJA used the HJA technique to identify job characteristics and factor structure of e-learning practice.
- The HJA used subjective and objective ratings from different sources. Various groups of people, for example an expert focus group, specialist groups and e-learning practitioners, were ask to participate in the analysis process and to give their subjective opinion on e-learning practice job characteristics. The outcome of these analyses was an enriched HJA.

- It used descriptions of trait activators as perceived by job incumbents.
- It presents the outcome as a broad narrative job description.
- It used the PPA to identify diverse behavioural styles from the participant group.
- The HJA is applied to results of the PPA to determine person-job fit.

With respect to the second research question, HJA in terms of the DISC dimensions is important for this study to describe the (1) characteristics of the e-learning job, (2) the job profiles and (3) the job structures.

2.6.4.7 Choices and research questions

e-Learning practice at TUT is diverse and may be on different levels of implementation and different levels of the technological innovation cycle. Currently most practitioners are on the second level, but small groups are moving towards the third and fourth levels of the innovation cycle. However, changing the job environment from structured to unstructured provides ample scope for role differentiation in e-learning practice. The P@W Programme, for example, offers five main roles, namely instructional designer, learner, e-moderator, researcher and manager. Formalising these roles into formal career paths may be beneficial not only for career development but also for the development of specialist e-learning practice communities.

Thomas, Buboltz and Winkelspecht (2004) are of opinion that only by isolating job characteristics that are most important for an individual can we enhance jobs in a way that would lead to satisfaction for that individual in that job. Therefore the question remains: What are these important characteristics and how can they be isolated?

Based on the concepts explained and the research, the research objective and consequent subsidiary questions are the following:

- What is the latent structure of the e-learning practitioner construct in terms of the work environment? (**Research question 2**).
 - What are the characteristics of the e-learning practitioner's job at TUT?
 - What is the job profile for the e-learning practitioner at TUT?
 - What are the job demands for the e-learning practitioner as have emerged from the Partners@Work Programme?

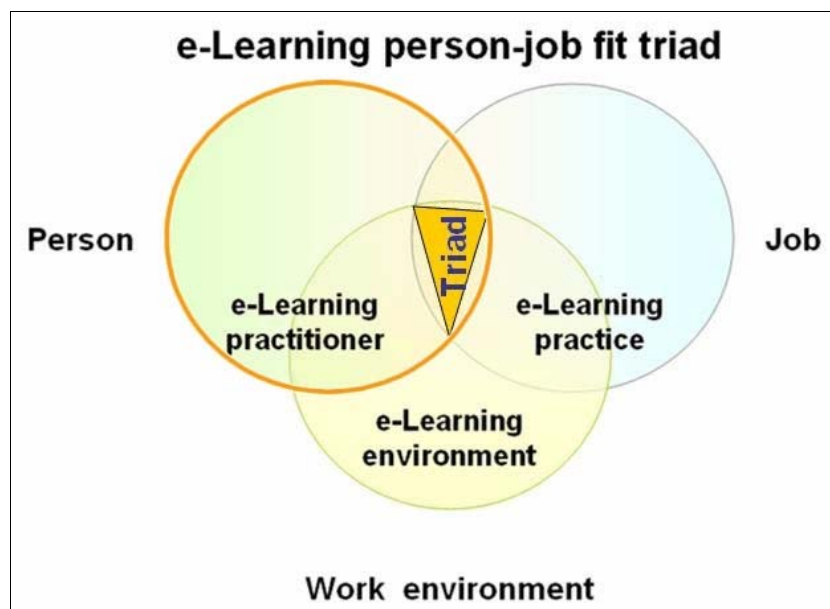
The next section will give an overview of the literature review on the fifth main focus area, namely e-learning practitioners, and will highlight relevant features of the e-learning practitioner system.

2.6.5 *e-Learning practitioner*

Teachers' conceptions about the nature of teaching and learning are the most important influences on how they teach. Intensive and comprehensive staff development programmes can be effective in transforming teachers' beliefs about teaching and learning and their teaching practice (Pebble, et al, 2005).

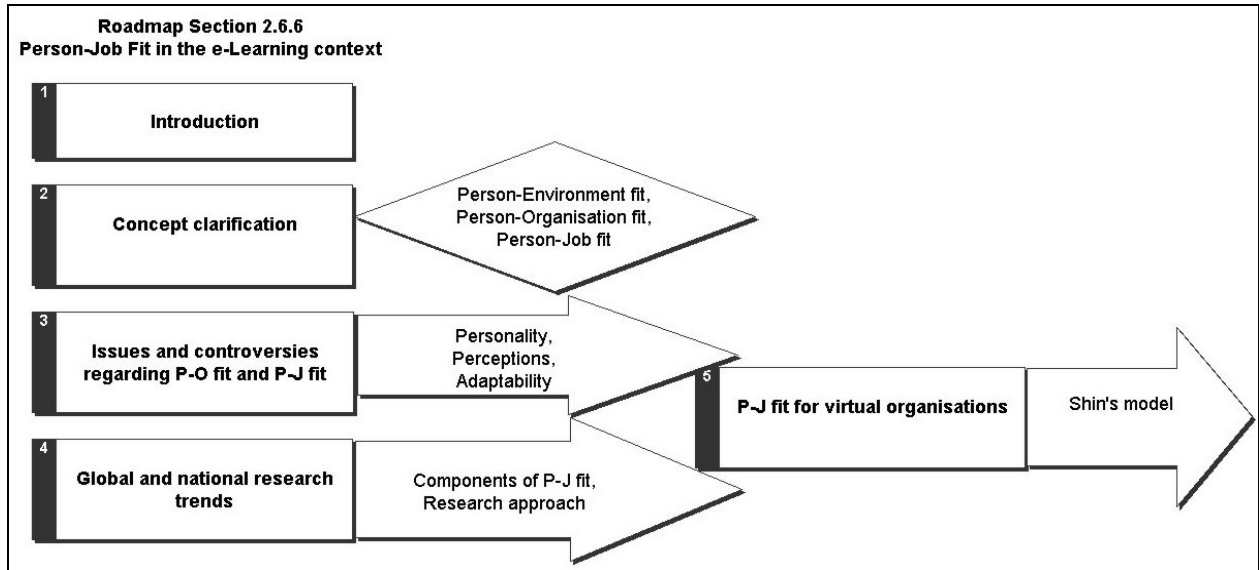
The fifth main focus area identified as relevant for this study is that of the e-learning practitioner. Figure 2.13 graphically represents the position of the e-learning practitioner in the e-learning person-job fit triad, which is discussed in the following section.

Figure 2.13: e-Learning practitioner in the person-job fit triad



This section is structured in terms of the layout structure for sections set as (1) introduction (2) clarification of the concept, (3) issues and controversies in the e-learning practitioner main focus area, (4) global and national research trends and reports on research done in this main focus area, (5) emerging issues and challenges, (6) personality in the work context (see Figure 2.14 for a graphical presentation of the layout structure of the section on the e-learning practitioner).

Figure 2.14: Layout of the sections on the e-learning practitioner



2.6.5.1 Introduction

The term 'e-learning practitioner' refers to individuals who create, use and maintain e-learning and teaching environments. They are involved in a number of job roles, which suggests a variety of competencies, skills and person attributes needed to fulfil the various job tasks. Specific person attributes are important for effective job performance (Bono & Judge, 2003:S5). The study of personality in the workplace offers numerous theories and models for understanding work behaviour but is also wrapped in controversies and issues (Tett & Burnett, 2003:502). Some of these issues pertain to the inherent limitations of different personality theories and models, for example the static nature of the Trait Factor Theory, or controversies about the optimal application of individual differences vs. being prejudiced and discriminating (Patton & McMahon, 1999:19). General assumptions about personality characteristics and the structure of personality provide useful possibilities for comparison and differentiation between different personality theories (Pervin & John, 1997; Dawda, n.d.).

The above-mentioned trends and issues are important for this study in terms of **providing a holistic view of the e-learning practitioner field**, and also to accomplish the four literature review purposes as proposed by Creswell (1994) (see section 2.3).

Studying the above-mentioned trends and issues also revealed a number of assumptions, errors of reasoning and probing questions regarding the e-learning practitioner main focus area. My observations in this regard are presented in Table 2.6.

Table 2.6: Observations regarding trends and issues in e-learning practitioner main focus areas

What are the assumptions of these trends and issues?
<p>e-Learning practitioners may be involved in a number of job roles.</p> <p>e-Learning practitioners need different competencies and new skills for e-learning practice.</p> <p>e-Learning practitioners should possess special personality characteristics.</p> <p>A variety of assessment tools are available to assess personality attributes.</p> <p>Person characteristics and the way in which they are organised define the structure of personality.</p> <p>Training and staff development to empower e-learning practitioners are needed.</p>
What are the errors of reasoning?
<p>Staff development and training programmes will equip e-learning practitioners with the competencies and skills needed to fulfil their e-learning job.</p> <p>Special knowledge, competencies and skills needed to perform as an e-learning practitioner are repeatedly stated in the literature (Kemshal-Bell, 2001:13; Salmon, 2003:214; Smith, 2005:5). Assumptions about the usefulness of staff development and training programmes to equip these practitioners are clearly stated in research articles (Ellis, O'Reilly & Debreceeny, 1998:191; Kearsley, 1998; Stehlik, n.d.) and although a change from technological to pedagogical approaches for these programmes is recognised by these programmes, there are certain missing links in this equation. Stated in the literature is the importance of the special characteristics needed by e-learning practitioners to successfully practice e-learning, but no evidence of e-learning training programmes accommodating the diversity of e-learning trainees in terms of their different person attributes could be found. Furthermore, no evidence could be found of screening or assessment procedures applied to identify the personal characteristics of these trainees prior to implementing the training programme. This implies that interventions through e-learning training programmes which do not take these very important human aspects into account may, firstly, fail to deliver successfully and, secondly, may lack the flexibility to identify specific niche areas based on personal profiles to accommodate these e-learning practitioners.</p>

Table 2.6: Observations regarding trends and issues in e-learning practitioner main focus areas (continued)

<p>The importance of identifying the characteristics and personal profiles of e-learning practitioners relates to two assumptions:</p> <p>Firstly, teaching and learning activities based on knowledge about the diversity of learning styles, customised to the preference of individual learners, offering multimode, individualised learning opportunities, may actively engage learners to a greater extent.</p> <p>Secondly, awareness of the personal profiles and characteristics of e-learning practitioners may be beneficial for determining compatibility with job demands and requirements or to guide worker placement in suitable jobs.</p>
<p>The question remains ...</p>
<p>Can anyone teach online? Would we be able to optimise professional development and staff training programmes for e-learning practitioners if the personal profile and characteristics of the e-learning practitioner are known and this knowledge applied to customise these programmes? Would we be able to give advice, support and guidance to e-learning practitioners on the utilisation of personal strengths in the workplace? Current research on e-learning practitioners does not provide sufficient answers to these questions and seems to overlook human work style behaviour as an important aspect of the world of work.</p> <p>Furthermore, the literature review revealed little research literature on formal studies done on the person attributes of the e-learning practitioner in terms of the e-learning work environment.</p> <p>In this study I will argue the case that knowledge about the characteristics and how these characteristics fit together in various profiles and person attribute structures may contribute to our understanding of the e-learning practitioner construct (research question 1).</p>

2.6.5.2 Clarification of the e-learning practitioner concept

The following paragraphs will highlight and elaborate on the 'who' and 'what' questions about e-learning practitioners.

2.6.5.2.1 Who are e-learning practitioners?

A variety of terms are used relating to online teaching and learning, for example 'online teacher', 'e-teacher', 'online professor', 'cyberteacher', 'e-moderator' and 'online facilitator'. Salmon (2003:214) lists 17 titles but suggests that further discussion between practitioners is needed to contextualise the role of the e-moderator (referring to online teaching and facilitation roles) in different contexts.

Terms such as 'tutor', 'trainer' and 'professor' are in common use and adding 'e-' in front of them suggests an electronic element in the teaching and learning environment. The terms 'tutor' and 'trainer' also suggest roles more inclined to facilitating than referring to subject matter experts. JISC (2004b) defines different practitioner communities as "learning and teaching practitioners, whose role is to support and direct learner learning; educational developers and learning technologists, whose role is to work with or alongside practitioners to enable and enhance e-learning; researchers into e-learning and developers of e-learning relating software, systems and standards" (JISC, 2004b:1).

For this study the term 'e-learning practitioners' is an umbrella term referring to practitioners who teach and facilitate in an online environment and who **create, use and maintain** electronic teaching and learning environments for themselves and their learners for pedagogical purposes. These instructors are not only professional educators, but also subject matter experts. The term 'e-learning practitioner' may include conceptualisations such as **online facilitator** (Adendorff (2004), **e-moderator** (Salmon, 2003), **online instructor** Hootstein (2002), and **online teacher** (Kemshal-Bell, 2001).

2.6.5.2.2 Roles of the e-learning practitioner

The variety of terms such as online facilitator (Adendorff (2004), online teacher / instructor Hootstein (2002) and e-moderator (Salmon, 2003) for describing the e-learning practitioner, reflects the vast number of roles that he or she may engage in. Defining 'e-learning practitioner' is a difficult task and is done best by linking specific roles to specific definitions. Different categories for the roles of the e-learning practitioner are presented in the literature, for example Berge (1995) suggests four main areas namely, "pedagogical, social, managerial and technical". Different authors use different categories to describe the different roles of the e-learning practitioner. for example Hootstein (2002) agrees with Berge but use different terms, namely, 'instructor', 'social director', 'program manager' and 'technical assistant'. Using Blignaut and Trollip's (2003) taxonomy, Adendorff (2004:217) categorises the roles of the online facilitator as "administrative, social supporter, instructor, guide and mediator". Some authors use the main task focus of the practitioner to clarify their definition, for example, e-moderator for the practitioner who facilitates and guides the online teaching and learning process, online facilitator

to describe the managing of communication online (Backroad Connections, 2002:3) or online tutor to describe the person who is more focused on the training aspect (Salmon, 2003:51). Teachers were asked to describe their role as online teacher and their descriptions related to facilitating, motivating, mentoring and guiding students' learning, whilst others felt differently and describe their role as difficult, exhausting and time-consuming (Kempshal-Bell, 2001:42).

There is "reasonable consensus in the literature about the changing and challenging role of the online teacher" (Backroad Connections, 2002:3). Changing from an expert authority to those listed above, is well described in the literature and well summarised by Collins and Berge (1996) as online teachers becoming "designers of learning experiences" rather than content providers; working in a team, sharing control of the learning environment with the learners, and the e-moderators' main role to "engage the participants so that the knowledge they construct is usable in new and different situations" (Salmon, 2003:52).

Adendorff (2004:71) identifies 23 different roles that the online facilitator, being the manager of learners and the learning process through an online medium (Backroad Connections, 2002:6) could fulfil. Some of the roles listed were those of learner, administrator, change agent, coach, communication expert, instructor, knowledge navigator, learning catalyst, listener, manager, mediator, mentor, moderator, social supporter, subject matter expert and tutor (Adendorff, 2004:71). As she points out, 23 roles are too many for an online facilitator to manage and therefore she limits the essential roles to those that facilitators play in order to be visible in the online environment. Using Blignaut and Trollip's taxonomy as a model, the roles that were identified were the following:

- "Administrator who conducts timeous course administration";
- "Social supporter who maintains social and emotional support in the group";
- "Instructor who facilitates the learning process";
- "Guide who encourages interactivity", and
- "Mediator who ensures fair play within the group" (Adendorff, 2004:217-218).

2.6.5.2.3 Effect of e-learning on the roles of the practitioner

Answers to a question about the effect of e-learning on the roles and skills of the e-learning practitioner in a study done by Brennen (2003a) indicate 10 items, namely "(1) new definitions of time and work patterns; (2) new levels of institutional support; (3) higher levels of teacher accountability; (4) lack of clarity about teacher roles online; (5) new rules for interaction, security and privacy; (6) pace of change contributing to 'de-professionalisation'; (7) assessment processes to be re-conceptualised; (8) higher levels of course planning; (9) varying levels of efficacy influencing self-perception and (10) application of what is known in a new context" (Brennen, 2003a:31-32).

It is clear from the above statements that the impact of e-learning on the practitioner calls for repositioning in the work environment, re-evaluation of existing practices, staff training and development to support and build capacity in the fast changing technological, sociological and pedagogical spheres, open communication between the organisation and the e-learning practitioner to establish clear guidelines, as well as streamlined job descriptions for e-learning practice. Besides the effect that all these changes have on the e-learning practitioner, the day-to-day challenges of e-learning practice have a profound impact on the e-learning practitioner. Although the “teacher manages discussions and learning activities in the traditional classroom, so it is online” (Backroad Connections, 2002:2): the e-learning environment has some special challenges that have to be addressed.

2.6.5.3 Challenges and key issues for e-learning practitioners

Smith (2005:4) believes that “learner-centered advising” is most important in student retention in higher education, therefore the e-learning practitioner should pay attention to students’ needs and make sure that teacher and students are visible to each other through communication in the virtual classroom. His views are in agreement with Adendorff’s (2004:75) namely that the demands on e-learning practitioners are different from those of face-to-face teachers and states that the e-learning practitioner faces, apart from other challenges, a dual challenge to “present course content and promote learning in the virtual environment” and “to foster development of a community of learners” (Smith, 2005:5). This is not an easy task as most of the learners have not met one another or the teacher and communication is mostly done in written format. Online learning and communication challenges are mentioned by various authors (Backroad Connections, 2002:4; Vrasidas, 2004:913; Adendorff, 2004:32) as the following:

Making effective use of

- interaction – for example, the desirability of compulsory as apposed to voluntary participation, degree of teacher control in online settings;
- communication – for example, avoiding misinterpretation of text, dealing with silences, finding the balance between private and public discussion, dealing with overwhelming e-mail messages, facilitating meaningful cooperation among learners during asynchronous discussions, and
- tools – for example, to support authentic assessment, to track student’s progress, to cater for individual differences and student diversity.

Other key issues for e-learning practitioners mentioned by Salmon (2003:59) are appropriate numbers of participants in a discussion, work or conference group; time spent online; the complexity of emails, discussion board and conference messages, and the development of professional online communities.

2.6.5.3.1 What do the e-learning practitioners need to carry out their duties?

There is a general awareness that e-learning is not merely “another medium for transmission of knowledge but that it changes the relationship between the teacher and learner” (Gray *et al.*, 2003). These authors also underline the need for the “development of innovative practices and the generation of new competencies in e-learning” to address key issues for e-learning practice, e-learning practitioner training and staff development initiatives (Gray *et al.*, 2003).

2.6.5.3.2 Competencies and skills of the e-learning practitioner

Salmon (2003) is of the opinion that few people are available with the abilities to fulfil the required roles as e-moderators. She suggests a selection process starting with a focus on those applicants who show “empathy and flexibility in working online plus willingness to be trained as e-moderators” (Salmon, 2003:53). She lists a number of e-moderator competencies in terms of characteristics under the themes of understanding of online process; technical skills; online communication skills; content expertise and personal characteristics (Salmon, 2003:53-55).

According to Salmon (2003) certain competencies can be acquired through training and others may develop during active engagement in practice. However, she is somewhat vague about assessment of the items listed under the category ‘personal characteristics’. Discussions on characteristics of the e-learning practitioner are largely influenced by the participants’ definition of practitioner. For example, Salmon (2003) describes e-moderators as specialist tutors who deal with online participants but who are not necessarily subject matter experts, but Burke’s (1999) description of the e-learning practitioner includes the characteristic of subject matter expert. However, during a conference debate the audience discussing these issues did not agree with Burke and felt that teaching skill was more important than knowing the subject area. One could argue that the term ‘online facilitator’ implies someone who guides and facilitates online learning, but a set of basic criteria for successful online facilitation includes “current knowledge of practice within the subject matter being taught is expected to be a key part in providing usable education” (Illinois Online Network, 2003:1). It is therefore important to clarify the scope of practice before comparing the different job roles and the competencies and skills needed to fulfil these roles.

Several meanings of the term ‘competencies’ have evolved but Hoffmann’s (1999) description of “referring to outputs or results of training – that is competent performance” and referring to “inputs or underlying attributes required of a person to achieve competent performance” is useful in the context of this study (Hoffmann, 1999:275). Smith (2005) proposes a competency model to illustrate how several competencies for online instruction might be woven into an integrated whole. The main sources used for this model are Ko and Rossen (2001), Palloff and

Pratt (2001b), Phipps and Merisotis, (1999) and Coghlan (2002). Competencies are divided into:

- Those needed prior to start of a course, for example the instructor should be “clear about course requirements” (Palloff & Pratt, 2001b:28); “communicate high expectations” Coghlan, 2002:bullet 9); “select appropriate technologies for course delivery” (Palloff & Pratt, 2001b:26-28).
- Those needed during the course, for example giving “prompt feedback” (Phipps & Merisotis, 1999:17); “modelling good participation” (Palloff & Pratt, 2001b:24); “promote reflection” (Palloff & Pratt, 2001b:33); “maintain momentum of the course” (Coghlan, 2002); “have fun and be open to learning from students” (Palloff & Pratt, 2001b:36).
- Those needed after the course, for example “reflect on the course as a whole, student evaluation of course and instructor” (Palloff & Pratt, 2001b:33).

Both Smith (2005:10) and Salmon (2003:53) are of the opinion that levels of competence should be recognised and that e-learning practitioners may either be on an entry, experienced or specialist level.

Competencies may develop over time but Smith (2005:11) cautions against the assumption that the mastering of online competencies will assure accurate information presented in the online course. Adendorff (2004:252) has a different approach to classifying the competencies of the online facilitator. She argues that the facilitator must play intellectual, social and energising roles and therefore needs people, thinking and energy competencies to fulfil these roles.

Leadership and interpersonal competencies are listed under people competencies and include indicators such as providing direction, motivating others and teamwork flexibility; thinking competencies include *inter alia* management control, written communication, technical skills and innovation; and descriptions such as drive, initiative and execution are typical of energy competencies (Adendorff, 2004:272). Another dimension mentioned by Salmon (2003:53-54) is that of emotional intelligence which includes aspects such as “motivation and intuitiveness (which act as goal drivers) together with resilience and conscientiousness (which curb excess in the drivers)” (Salmon, 2003:53). “Self-awareness, interpersonal sensitivity and the ability to influence” are also important characteristics of the e-moderator (Salmon, 2003:56).

Although Salmon (2003) and Adendorff (2004) differ in their use of terminologies, their conceptualisations of e-moderator and online facilitator show similarities in terms of job roles. However, Salmon’s view on e-moderators’ competencies reflects a developmental approach that implies that some of these competencies should be acquired through training and

experience. Approaches reflecting such views may have a positive effect on staff training and development programmes.

Kemshal-Bell's (2001) categorisation of the skills and attributes needed by the e-learning practitioner to fulfil the different job roles differentiates these into three main task areas namely, "technical, facilitation and managerial skills" (Kemshal-Bell, 2001:12). These may be summarised as:

- Technical skills to use the technology, including the use of e-mail, discussion forums, chat rooms, website development, video and audio conferencing.
- Facilitation skills (Collinson, Elbaum, Haavind & Tinker, 2000), which relate to interpersonal communication and include engaging the learner in the learning process, questioning, listening and feedback skills, the ability to guide and support learners, managing online discussions, building online teams (Geisler, 2002) relationship building, motivational skills and a positive attitude; and an ability to be innovative and experimental.
- Management skills to manage the learners as well as the learning process, that is, time management and planning skills, ability to give structure and guidance to learners, to monitor the learning process and to review the learning process to identify needs and to adapt and change the teaching and learning environment accordingly (Kemshal-Bell, 2001:12-14).

Kemshal-Bell's (2001:40-41) analysis of the rating of the above-mentioned skills and attributes reveals that practitioners view facilitation skills as the most important. Eight of the eleven facilitation skills/attributes were rated as critical and the other three as very important, and only one technical skill (use of email) and none of the management skills were rated critically important (Kemshal-Bell's, 2001:40-41). However, answers to a follow-up question ranked *technical ability* as the fourth most important skill for e-learning practitioners, whilst the most important skills were listed as the ability to engage learners in e-learning; to motivate learners; and to build relationships between the e-learning practitioner and the learners and between learners. From the participating group in "The Online Teacher" study by Kemshal-Bell (2001), 43 percent had less than a year's experience in e-learning and this might be the reason why their views in terms of the importance of technical skills differ from the list that Salmon (2003) proposes. She is of the opinion that after a year in practice the e-moderator should have developed sufficient technical skills to be able to create and manipulate electronic conferences and e-tivities, to generate online environments and to use alternative software and platforms (Salmon, 2003:54).

2.6.5.4 Development of a preliminary taxonomy

For the purpose of this study, the skills and attributes of e-learning practitioners are broadly categorised in a taxonomy that summarises the available international and national literature from the most relevant articles, papers, books and studies between 1996 and April 2004.

2.6.5.4.1 Attributes of the e-learning practitioner

Tables 2.7 to 2.15 provide a summary of the various characteristics of the e-learning practitioner as synthesised from the literature.

Nine main themes have been identified: technical, curriculum, management, teaching skills, personal/affective traits, communication styles, teaching styles, personality traits and learning styles. The characteristics of each theme are referenced and listed.

1. Technical skills relate to the ability to use the technology and not to the skills required to use them as teaching and learning tools.

Table 2.7: Technical skills

Skills	Reference
Basic computer skills Full mastery of the technology being used/techno-literate. Using: <ul style="list-style-type: none"> • Email is the most common method for communication and is an essential tool – in many ways the e-learning practitioner’s voice. • Discussion forums are important as tools for community building as well as asynchronous communication. • Chat rooms are useful but not essential. • Website development tools and a general understanding of HTML for website and instructional design is important, opinion is divided over the importance of webpage writing skills. 	Collins & Berge (1996:15) Sanders (2001) Hootstein (2002) Hamilton & Scandura (2003:389) Hoffmann (2003) Brennan (2003a:21, 43; 2003b:36-37)

Table 2.7: Technical skills (continued)

Skills	Reference
<ul style="list-style-type: none"> • Internet skills are essential. • LMS (VLE) is an essential tool. • Video and audio conferencing are becoming more available and affordable. <p>Coping with new hardware and software applications is also related to a positive attitude and risk-taking.</p>	

2. Curriculum skills refer to the ability to apply the online teaching and learning process in the context of the curriculum development cycle.

Table 2.8: Curriculum skills

Skills	Reference
<p>Programme development from pre-established format to flexible and open structures.</p> <p>Development of course material</p> <p>Assessment competencies</p> <p>Ability to review the teaching and learning process to identify changes and improvements.</p>	<p>Van Sickle (2003:14)</p> <p>Queiroz (2003)</p> <p>Brennan (2003a:37; 2003b:43)</p>

3. Management skills refer to the planning, scheduling and organising activities for the-learning practitioner as well as for the learning process.

Table 2.9: Management skills

Skills	Reference
<p>Time management</p> <p>Planning skills</p> <p>Organisational skills</p> <p>Providing guidelines to learners</p> <p>Capacity to monitor the learning process</p>	<p>Kemshal-Bell (2001:85-97)</p> <p>Berge (1995:15)</p> <p>Hootstein (2002)</p> <p>Van Sickle (2003:12)</p> <p>Australian Flexible Learning (2003:7, 11)</p> <p>Queiroz (2003)</p> <p>Brennan (2003a:41, 53; 2003b:43)</p>

4. Teaching skills refer to the ability to facilitate, motivate, mentor and guide learners through their learning experience.

Table 2.10: Teaching skills

Skills	Reference
Motivating	ITRC (2000:10-11)
Coaching	Kemshal-Bell (2001:85-97)
Listening skills – making learners aware that they are being listen to	Sanders (2001) Australian Flexible Learning (2003:11)
Mentoring skills	Stetson University Virtual School teacher
Mediating chat	profile (n.d.)
Active participant	Kippen (2003:25)
Creative	Brennan (2003b:43)
Reflective	Shepherd (2003b)
Building online teams	
Understanding	
Engaging the learner in the learning process	
Scaffolding, giving direction and support	

5. Personal/affective skills refer to the “soft” side of the e-learning practitioner and the way the person copes as e-learning practitioner in the online environment.

Table 2.11: Personal/affective skills

Skills	Reference
Patience	Burke (1999)
Persistence	Kemshal-Bell (2001:85-97)
Coping with frustration	Hamilton & Scandura (2003:400)
Flexibility	Australian Flexible Learning (2003:11)
Problem solving	Brennan (2003b:44)
Coping with time demands	Stetson University Virtual School teacher
Compassion	profile (n.d.)
Building trust	

6. Communication skills refer mainly to the interpersonal communication skills used in guiding, supporting and encouraging the online learner through their learning experience (Kemshal-Bell, 2001).

Table 2.12: Communication skills

Skills	Reference
Learner support	Berge (1995)
Counselling skills	Kearsley (1997))
Focus on one-to-one communication	Spector & de la Teja (2001:3)
Interpersonal skills	Kemshal-Bell (2001:85-97)
Responsiveness	Hoffmann (2003)
Flexibility	Queiroz (2003)
Continuous feedback – should be constructive	Brennan (2003b:38, 43-44) ADEC (2003)
Active approach	Illinois Online Network (2003)
Be aware of cultural and language differences	Palloff & Pratt (1999)
Relationship building	

7. Teaching styles refer to the e-learning practitioner's way of presenting him/herself as online teacher.

Table 2.13: Teaching styles

Skills	Reference
Grasha's (2004) five teaching styles:	ITRC (2000)
<ul style="list-style-type: none"> Delegator: concerned with developing learner's capacity to function in an autonomous fashion 	Kemshal-Bell (2001:86) ADEC (2003) Brennan (2003b:52)
<ul style="list-style-type: none"> Formal authority: possesses status amongst learners 	Hamilton & Scandura (2003:397) Queiroz (2003)
<ul style="list-style-type: none"> Facilitator: emphasises the personal nature of teacher-learner interactions 	Salmon (2003:53-56) Gracha (2004)
<ul style="list-style-type: none"> Personal/role model: believes in "teaching by personal example" 	Indiana State University (2004) Shepherd (2003a)
<ul style="list-style-type: none"> Expert: possesses knowledge and expertise that learners need using questioning styles, flexibility, adaptability. 	

8. Personality/person attributes refer to the inherent traits that the e-learning practitioner possesses.

Table 2.14: Personality attributes

Skills	Reference
Take chances	Burke (1999)
Prompt	Kemshal-Bell (2001:97)
Does not need a lot of sleep	Australian Flexible Learning (2003:8)
Good sense of humour	Queiroz (2003)
Perceptive	Brennan (2003b:48)
Collaborative	Illinois Online Network (2003:17)
Adventurous/risk-taking	Shepherd (2003b)
Creative/innovative	Kippen (2003:28)
Motivated	Stetson University Virtual School teacher profile (n.d.:9)
Adaptable	
Reflective	
Enthusiasm is critical	
Teacher "goodwill"	
Openness	
Sincerity	
Positive attitude	
Assertive	
Proactive	

9. Learning styles refer to the preferred way of learning. To optimise the teaching and learning experience the online teacher has to accommodate own learning style as well as the learning styles of learners.

Table 2.15: Learning styles

Skills	Reference
Understanding of learning styles of learners	Sanders (2001:2)
Understanding of own learning styles	Kippen (2003:10)
Prefer to	Brennan (2003b:38, 58)
<ul style="list-style-type: none"> • read, write and tell stories 	Illinois Online Network (2003:17)
<ul style="list-style-type: none"> • do experiments and figure things out 	Stetson University Virtual School teacher profile (n.d.:9)
<ul style="list-style-type: none"> • draw, build design and create things 	
Learns best by	
<ul style="list-style-type: none"> • rhythm, melody and music 	
<ul style="list-style-type: none"> • touching, moving and processing 	

Table 2.15: Learning styles (continued)

Skills	Reference
<ul style="list-style-type: none"> • knowledge through bodily sensations • studying natural phenomena in their natural settings, learning how things work • sharing, comparing, relating and cooperating • working alone, self-paced instruction 	

An interesting observation is that the list of e-learning practitioner skills and characteristics synthesised from the literature shows a remarkable resemblance to a list compiled by teachers themselves who participated in the NCVET project "One size doesn't fit all: pedagogy in the online environment" reported by Brennan (2003b:48).

They listed the characteristics of a good online teacher as: "active, communicative, facilitative, adventurous, prepared to 'have a go', knowledgeable about content and medium, possesses a vision for the future, good manager/planner, organised, patient, creative, motivated, positive, emphatic, supportive, prompt, persistent, technically competent, someone who monitors student progress, pedagogical adept, compassionate, perceptive, collaborative, confident, committed to learning, adaptable, someone who doesn't need sleep and has a good sense of humour" (Brennan, 2003b:48). Although technical skills were identified as critical for successful online teaching and learning, these skills were not mentioned by the participating teachers as crucial elements of 'good teaching' (Brennan, 2003a). This observation agrees with reports from Kemshal-Bell (2001:82) stating that technological skills were not rated as critical skills for the e-learning practitioner (Kemshal-Bell, 2001:41). These findings raise questions about the difference between 'successful' and 'good' teaching. Brennan (2003b) is of opinion that 'good' teaching is characterised by attitudinal characteristics and technical skills, although critical to successful teaching, do not assure 'good teaching' (Brennan, 2003b:49).

Based on the themes and characteristics listed under each theme, the resulting preliminary taxonomy was used as a framework for constructing a short pilot survey. The survey, titled 'The characteristics of the e-learning practitioner', was conducted at the WebCT conference in April 2004 at Stellenbosch. The majority of participants were lecturers at higher education institutions who were involved with e-learning practice. Statements for the survey were not directed at 'good' or 'effective' e-learning practice but were broad indices of skills, styles and characteristics of the e-learning practitioner. Participants were asked to select alternatives from a predefined list with an invitation to add commentary and more options.

Indices such as professional knowledge and skills, technical, curriculum and teaching skills were frequently selected. Management and personal affective indices were not regarded as very important and brain preference was not selected at all. Specific skills and characteristics that were selected as important were instructional design and the development of course material; using the bulletin board; assessment competencies; teaching skills such as motivating, mentoring, active participation and creativity; personal/affective skills such as patience, flexibility and problem solving; communication skills such as continuous feedback and support for students; a facilitative teaching style; and a preferred learning style for the practitioner as one of sharing and experimentation.

The most frequently selected personality attributes indicated a practitioner who is motivated, creative and adaptable. Although this group did not select management skills as an important index of the characteristic e-learning practitioner, the majority of the participants indicated time management, planning and organisational skills as important management skills. According to the participants *listening skills* were only moderately important, which is an interesting observation seeing that they felt that student support and continuous feedback were very important. According to Kemshal-Bell (2001), skills needed for e-learning that differ from those needed for face-to-face teaching relate to communication skills pertaining to synchronised communication, fast and real time communicative feedback and responses between e-learning practitioner and learners, as well as the technical skills needed in a fast changing environment (Kemshal-Bell, 2001:61).

Implications for study

Debates on questions such as: "Do online teachers have to have certain characteristics?" (Burke, 1999); "Are these basic personality traits or ones that can be taught?" (Burke, 1999); "Are all teachers capable of being online instructors?" (Simon, 2004:5) and issues about new roles, competencies and skills needed by practitioners for carrying out their jobs are frequently cited in the literature, as discussed in previous sections. Moving back to 'real world' practice, I am of the opinion that higher education institutions sometimes assume that all teachers can integrate smoothly into e-learning practice, that 'practice makes perfect' and that e-learning practice is an additional 'add-on' to a normal workload.

It may sometimes happen therefore that teachers are practising e-learning not because they are interested in doing so, but because they were told to do so. According to Salmon (2003:9), e-moderators need special qualities and Palloff and Pratt (2001b:21) are of the opinion that introverted online teachers are more successful than those with charismatic personalities (Shepherd, 2003a). Research studies on the personal characteristics of e-learning practitioners are scarce and sometimes intertwined with aspects such as competencies and

skills, and most authors do not differentiate clearly between personal attributes, skills or styles when describing e-learning practitioners (Palloff & Pratt, 2001b:21; Schall, Schmidt, Stewart-Burns & Stiverson, 2004).

On the other hand a wealth of information is available pertaining to quantitative studies and factor analysis of specific personality traits such as Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience, the five factors used in the Five Factor approach (Barrick & Mount, 1993; Salgado, 1997:30). Many research studies are also available focusing on the technological adoption cycle and the five types of adopters (Zemsky & Massy, 2004; le Roux, n.d.; van der Merwe, n.d.;;) but there is a **gap** in the research literature regarding the specific personal characteristics of these adoption types as well as the specific personal characteristics of the effective or successful e-learning practitioner.

The definition of the e-learning practitioner construct implies not only the characteristics of the person and the job involved in e-learning, but also the context of practice. Which directs the study investigation towards the selection of personality indices relevant to **work behaviour?** To streamline my research focus I narrowed the personality characteristics down to **work style behaviour**, therefore excluding characteristics defined as competencies and skills.

The research literature refers to the evaluation of online teaching and learning in terms of quality, standards of teaching materials and assessment of online teachers' performances by peers and students (DfED, 2003; Mayes & de Freitas, 2004; Bacsich, 2005). I could find only one research study done by Fuller *et al.* (2000) on the personality type and teaching style preferences of the *online professor*. They used the Myers-Briggs Type Indicator (MBTI) and Anthony Gregorc's Transaction personality assessment instruments to profile the online professor.

Di Petta (1998) describes the use of psychological type differentiation as a "group process 'tool' for moderators of on-line discussion groups". He highlights a number of key recommendations and ideas that emerged from this research as: "Type awareness can have a positive effect on an on-line group's ability to deal with change; knowledge of type can help create and maintain a positive on-line environment; type can be used as a meta-analysis, communication and leadership tool; type can be used as a process and group checking or evaluation tool". One observation made was the initial view of the moderators that type theory was "fun to do but that would have little practical application to their work". According to Di Petta (1998), the value of using psychological type as a tool for dealing with the complexities of the online environment, its potential to help moderators focus online communication to the specific preferences of

individuals or groups and to facilitate the moderator's work in establishing connections between and among the members of an on-line group, quickly became evident to the users. "However, learning how to use type as a tool for on-line work requires further research and testing to establish what specific roles type can or should play in a moderator's work" (Di Petta, 1998).

Shifting focus away from group processes, such as interpersonal communication and self-awareness, towards work relationship and interaction between the individual practitioner and e-learning practice, reveals another research gap. I could not find any studies done on the work behavioural styles of e-learning practitioners. Focusing on specific personality attributes, Dunn (2004) conducted a study titled: "Cognitive playfulness, innovativeness and beliefs of Essentialness: characteristics of educators who have the ability to make enduring changes in the integration of technology into the classroom environment". She investigated the way in which the personality characteristics mentioned in the study title relate to a sustained high level of information technology use in the classroom and found a significant correlation between these characteristics and the individual's sustained ability to use technology at a high level (Dunn, 2004:i). Dunn (2004) refers to yet another gap in current research on adoption of innovation, namely the "focus on factors affecting immediate change, with few studies referring to enduring or lasting change" (Dunn, 2004:i). As with many other researchers in this field, however, her study focuses on specific characteristics and not on characteristic personality profiles or behaviour types. Opinions voiced by practitioners themselves were captured by Joy (2004) in a qualitative study on "Instructors transitioning to online education". Comments on the question "what personality characteristics are needed for the e-learning practitioner?" vary from "online teaching is not for everyone; takes a certain type of person to teach online and matter of style and personality" to "Online is reflection and listening and teacher is receiving, not giving" Joy (2004:209, 210, 216, 224).

It is clear from the above discussion that the characteristics of personality may include a variety of personal attributes and are described, classified and analysed according to the preferred approach of the researcher. Therefore to clarify the fuzziness surrounding the characteristics of the e-learning practitioner, the following paragraphs will focus on defining personality in the work context, assumptions and controversies regarding personality, approaches to personality in the work context, personality attributes in terms of behavioural style, and assessment of personality.

2.6.5.5 Definition of personality in the work context

Pervin and John (1997:4) provide a definition of personality as "those characteristics of a person that account of consistent patterns of feeling, thinking and behaving". From a work perspective, personality might be seen as those characteristics that "fit the demands of the working

environment” (Bergh & Theron, 2001:320). According to Patton and McMahon (1999), empirically related models such as the Big Five and the Five Factor Model are changing views on personality at work and offer much for the understanding of the construct of personality (Patton & McMahon, 1999:19). The static trait-and-factor theory has evolved to more developmental and dynamic approaches that assume that the principle of give and take is a feature of the person-environment fit approach (Patton & McMahon, 1999:19). Chartrand (1991) in Patton and McMahon (1999:19) proposes that “the greater the congruence between personal characteristics and job requirements, the greater the likelihood of success” (Chartrand, 1991:250, in Patton & McMahon, 1999). Furthermore, the person and the environment change continuously (Patton & McMahon, 1999:19), therefore the importance of ongoing personality assessment and job redesign is evident (see Appendix B3 for a more detailed description of assumptions and controversies on personality).

2.6.5.5.1 Personality attributes in terms of behavioural styles

Mapping individual types of people is as old as the belief of the ancient Greeks that the human body contained four “humours”, namely blood, yellow bile, phlegm and black bile (Synergi, n.d.). These humours, based on the four elements of fire, air, water and earth, influenced a person’s behaviour and were each responsible for different types of behaviour (Axiom DISC, n.d.). Modern tetralogies are numerous and perhaps Carl Gustav Jung’s description of the four functions that a person uses to adapt to the world, namely, Sensing, Intuition, Feeling and Thinking, is one of the best known. The Myers-Briggs Type Indicator, based on Jung’s psychological types and functions, is an example of a measuring inventory based on Jung’s personality typology and is one of the most popular personality tests around (Buchanan & Huczynski, 2004:58).

In the early 1920s, William Moulton Marston, an American psychologist, tried to describe people’s emotional responses (Thomas Disc Systems, n.d.). He published his findings in a book entitled *Emotions of Normal People* in 1928 and theorised that “human behaviour was a function of the environment of that individual” (Thomas Disc Systems, n.d.). The individual’s behaviour was described on a “scale from antagonistic to favourable reactions within this environment and measured as active or passive” (Thomas Disc Systems, n.d.). He developed a test to measure the personalities he was trying to describe using the two limits as baseline and chose four typical patterns of interaction between the individual and his environment as important behavioural factors to measure. The four factors are **D**ominance, **I**nfluence, **S**teadiness and **C**ompliance, from which the **DISC** Personal Profile Analysis derives its name (Thomas Disc Systems, n.d.).

2.6.5.5.2 Personality assessments

Personality-related attributes necessary for any job are established by job analysis techniques and psychological testing, whilst the necessary competencies to perform the job successfully are listed in the job specification (Bergh & Theron, 2001:510). Assessment instruments such as questionnaires and self-report inventories are usually applied to determine attributes that will contribute to the best fit between the person and the job (Bergh & Theron, 2001:510-511).

Implications for this study

The definition of personality in the work context for this study relates to the definitions of Allport (1961:28), which state that personality is “the dynamic organisation within the individual of those psychophysical systems that determine his characteristic behaviour and thought” and Pervin and John (1997:4) who state that “personality is those characteristics of a person that account of consistent patterns of feeling, thinking and behaving” and Bergh and Theron (2001:316) who view personality from a work perspective as those characteristics that “fit the demands of the working environment” (Bergh & Theron, 2001:320).

For this study the DISC profiling instrument was used to determine work behaviour style. The scope of such profiling is narrowed to dimensions of “work” personality and does not include measurement of job competencies and skills or cognitive aspects such as intelligence, memory, reasoning or problem solving.

With respect to the first research question, work behavioural styles in terms of the DISC dimensions are important for this study to describe the (1) characteristics of the e-learning practitioners, (2) their work behavioural profiles and (3) work style patterns.

Based on the explained concepts and research, the research objective and consequent subsidiary questions are to identify the latent structure of the e-learning practitioner construct in terms of person attributes (**research question 1**):

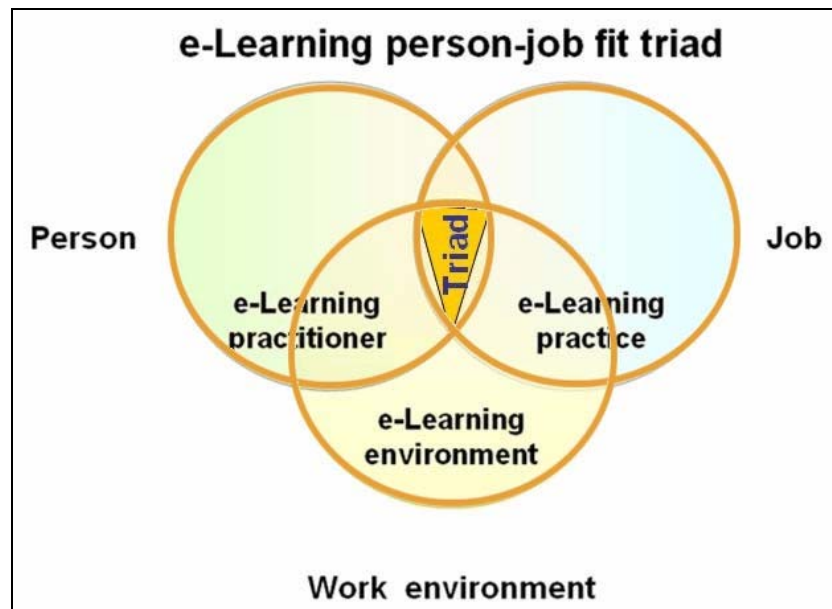
- What are the characteristics of e-learning practitioners in terms of work behavioural styles at TUT?
- What are the descriptive personal work style profiles of e-learning practitioners at TUT?
- What is the structure of the personal work style patterns of e-learning practitioners at TUT?

The next sections will give an overview of the literature review on the sixth main focus area, namely person-organisation fit and person-job fit models and theories as relevant features of the e-learning practitioner system.

2.6.6 e-Learning practitioner–e-learning practice fit in the e-learning context

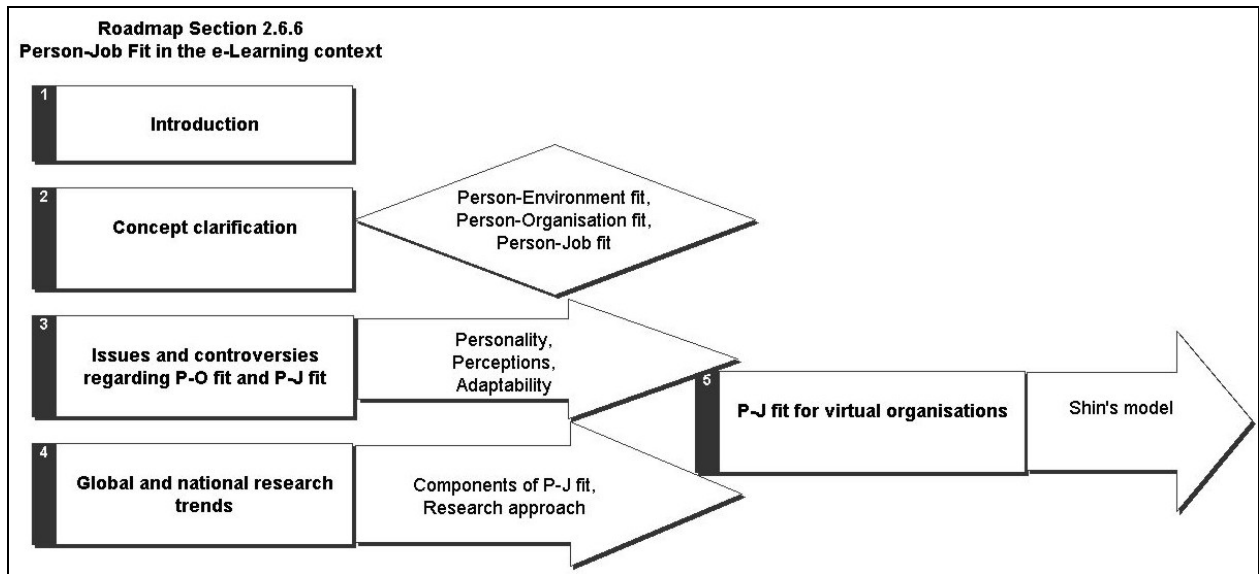
The last main focus area relevant for this study is the fit (P-J fit) between e-learning practice (the job – section 2.6.4) and the e-learning practitioner (the person – section 2.6.5) in the e-learning context (sections 1.8 and 2.6.3). Figure 2.15 graphically presents the position of the e-learning practitioner, e-learning practice and the e-learning work environment in the e-learning person-job fit triad discussed in the following section.

Figure 2.15: Position of the three legs in the person-job fit triad



This section is structured in terms of the layout structure for sections set as (1) introduction, (2) clarification of the concept, (3) issues and controversies in the P-J fit main focus area, (4) global and national research trends and reports on research done in this main focus area, and (5) person-organisation fit for virtual organisations (see Figure 2.16 for a graphical presentation of the layout structure of the section on the fit between the e-learning practice and the e-learning practitioner in the e-learning work environment).

Figure 2.16: Layout of the sections on P-J fit



2.6.6.1 Introduction

The management and development of human resources in organizations depend on the ability a) to identify individual differences in employees' personalities and b) on determining how congruent these are with the organizational attributes. The reason for this is that the organization effectiveness is dependent on the collective personality profile which employees attribute to the organization. One of the goals of personality research in the work context is to facilitate a good fit between the employee and the organisation (Bergh & Theron, 2003 in Momberg, 2004:36).

A number of authors, for example Lau and Shaffer (1999) and Westerman and Cyr (2004), indicate a significant relationship between person-organisation (P-O) fit and job performance. Congruence between the person and the organisation results in a number of positive outcomes for both the person and the organisation. Therefore it is not surprising that P-O fit and person-job (P-J) fit, being subsets of the overarching concept of person-environment (P-E) fit, are most prominent in the employee selection context (Sekiguchi, 2004:179). A simplistic definition of P-E fit boils down to the "degree of congruence or match between the person and the environment", whereas P-O fit refers to the compatibility of the "person and the organisation" and P-J fit refers to the match between the "attributes of the person and the attributes of the job" (Sekiguchi, 2004:179).

A number of scholarly works in the field of P-E fit have been published on the use of multidimensional approaches and models in P-O fit research; multiple fit measures; and the use of different environmental levels to examine P-E relationships in applications such as employee

selection, vocational choice and staffing processes (Judge & Ferris, 1992; Jansen & Kristof-Brown, 1998; Parkes, Bochner & Schneider, 2001; van Vianen, 2001; Shin, 2004; Westerman & Cyr, 2004). Issues that emerged from the work done by these researchers are *inter alia* (1) “questions regarding the true content domain of P-O fit; (2) how fit should be measured and operationalised; (3) which approach or combination of approaches most accurately predict outcomes” (Weterman & Cyr, 2004); (4) “questions regarding the criteria for choosing the fit components” (van Vianen, 2001); (5) questions regarding a variety of ‘within-level’, ‘cross-level’, and ‘temporal’ factors that contribute to an overall perception of P-E fit (Jansen & Kristof-Brown, 1998). Furthermore, Ryan and Kristof-Brown (2003) list four relevant issues in P-O fit assessments, namely (1) the relevance of personality in P-O fit; (2) positive and negative influences of P-O fit on personality; (3) accuracy of fit perceptions and (4) fit related to adaptability. These issues are important points of departure for this study in terms of **providing a colourful background of the diversity and complexity of the theory on P-J fit, also applicable in the e-learning context**. This also accomplishes the four literature review purposes as proposed by Creswell (1994) (see section 2.3).

Studying P-J fit as a main focus area revealed a number of assumptions, errors of reasoning and probing questions. My observations in this regard are presented in Table 2.16.

Table 2.16: Observations regarding trends and issues in P-J fit in the e-learning context main focus area

What are the assumptions following these trends and issues?
The greater the congruence between the personal characteristics and job requirements the greater the likelihood of success.
P-E fit assumes an environmental context for the fit.
Personal characteristics and job characteristics form a triad with the environment.
The management and development of human resources in organisations depend on the ability to identify individual differences in employees’ personalities and on determining how congruent these are with organisational attributes.
P-O fit assumes that personality congruence is a direct predictor of employee intention to remain with the organisation.
Because of the stability and visibility of personality over time, assessment based on personality should not change dramatically over time.

Sometimes perceptions of misfit may lead the person to become more self-aware and he/she may even perceive the misfit as an opportunity for self-development.

Accuracy of fit perceptions relate to subjectivity and willingness to change.

Modern organisations are dynamic and fluid – thus a good fit depends on the adaptability of the person in terms of their ability and motivation to adapt (change) to fit the situation.

Individuals should place high value on autonomy, flexibility and diversity to achieve P-O fit in virtual organisations.

What are the errors of reasoning?

Teacher-job fit becomes online teacher-virtual job fit.

Traditional congruence between teachers and their teaching jobs resulting in a good fit is not directly transferable to the e-learning environment (Shin, 2004). The sets of person and job characteristics needed for each environment differ from each other and congruence between one set in a traditional teaching and learning environment will not transfer seamlessly to the e-learning environment. Therefore the identification of the relevant set of person and job characteristics for a given environment is most important for matching the sets.

The question remains ...

What are the characteristics of the e-learning practitioner and the e-learning job needed to enhance P-J fit in the e-learning environment? Current research on e-learning and P-E fit in higher education (Lindholm, 2003) does not provide sufficient answers to these questions and seems to overlook the importance of a well-recognised principle in the human resource management domain. Furthermore, the literature review revealed a gap in the literature on formal studies done on matching the characteristics of the e-learning practitioner, the e-learning job and the e-learning environment. Shin (2004:725) calls for a focus on “individual characteristics necessary for employees to be effective” in virtual organisations.

In this study I will argue that **knowledge about the characteristics of e-learning practitioners and e-learning practice (the job), and how these characteristics fit together in terms of goodness of fit, may contribute to our understanding of the e-learning practitioner construct in terms of a number of possible person-job fit scenarios** (research question 3).

The following paragraphs will highlight the meaning of P-E fit and discuss interactionist theories as integrative models.

2.6.6.2 Conceptualisations of P-E fit

Sekiguchi (2004:179) reviews various conceptualisations of **P-E fit**, which is an overarching concept of **P-O fit** and **P-J fit**, “the two most extensively studied fit constructs in the employee selection context”, and I agree with Kristof (1996) that P-O fit is complex and multidimensional in nature and is “the compatibility between people and organizations that occurs when: (a) at least one entity provides what the other needs or (b) they share similar fundamental characteristics or (c) both” (Kristof, 1996:4-5). The essence of P-E fit theories is “a matching process between self-knowledge and world-of-work knowledge” (Patton & McMahon, 1999:33) that leads to either congruent or incongruent interactions. The P-E fit perspective assumes that individuals seek out congruent environments and that a process of ongoing adjustment takes place between the individual and the environment. Theories on work adjustment emphasising these dynamic interactions are also included in the broad framework of P-E fit theory (Patton & McMahon, 1999:34). This reflects a shift from the trait factor approach introduced in the early 1900s by Frank Parson to the modern dynamic approach of P-E fit (see discussion on ‘Occupational-orientated Personality theories’ in Appendix B3).

Brown, as one of the most recent P-E theorists, addresses and extends the concept of discordance of incongruence by accepting contextual influences in the work setting and by considering work in the context of life (Patton & McMahon, 1999:35). His work relates to trends in the development of career theory (Patton & McMahon, 1999:28), but is also relevant to this study in terms of his thinking on broadening the base, and enrichment of trait factor and P-E fit approaches. This allows for a holistic approach in my thinking about the relationships between the e-learning practitioner and e-learning practice interacting in the e-learning environment. Using the broader P-E fit approach to understand these interactions also relates to the interactionist theory most relevant to this study (see discussion on ‘Relationship between job and personality’ in section 2.6.4.6).

The frequently cited conceptualisation of P-E fit by Kristof (1996) assumes that “human behaviour is a function of the person and the environment and that the person and the environment need to be compatible” (van Vianen, 2001).

Within organisational psychology, P-E fit approaches have been used widely in the study of

- personnel selection (Haaland & Christiaansen, 2002; Lievens, De Fruyt, & Van Dam, 2001; Lievens, Chasteen, Day & Christiansen, 2005);
- trait activation theory used for evaluating the construct validity of assessment centre ratings (Haaland & Christiansen, 2002);
- individualism/collectivism across cultures (Parkes, Bochner & Schneider, 2001);

- human resource staffing processes (Judge & Ferris, 1992), and
- models and theoretical frameworks for understanding various vocational processes and work behaviour (Holland, 1992).

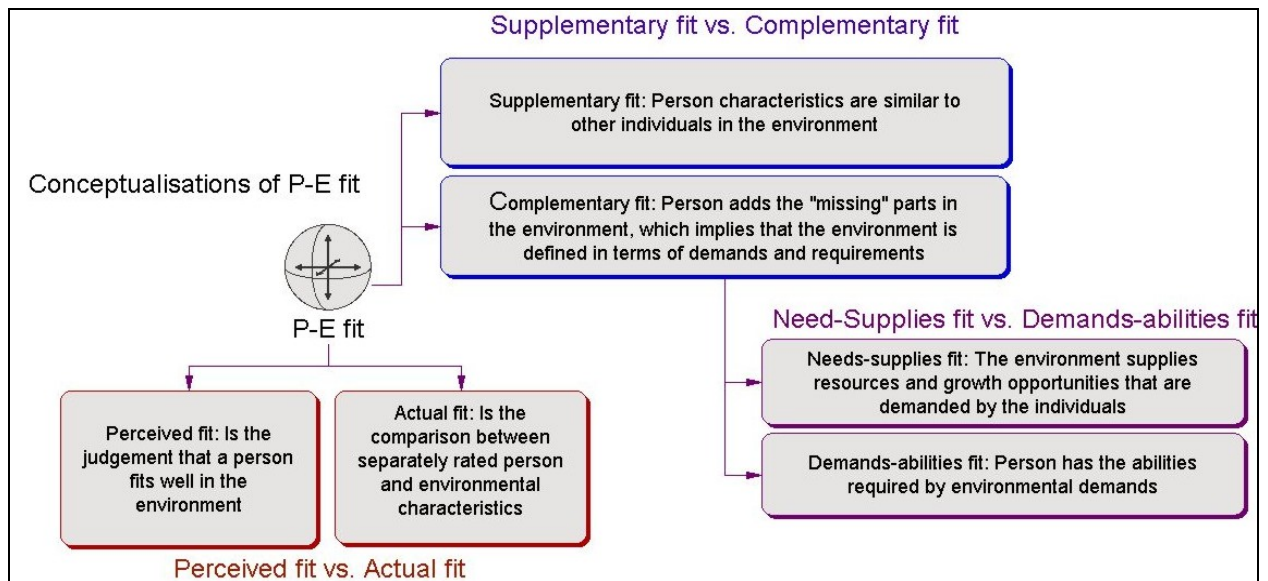
However, the multidimensional nature of the P-E fit construct suggests a variety of identifiable types, for example person-vocational fit (Holland, 1992); person-organisational fit (Sekiguchi, 2004); person-group fit (Jansen & Kristof-Brown, 1998; Hollenbeck, 2000); person-job fit (Shin, 2004); person-person fit (Jansen & Kristof-Brown, 1998).

Different type combinations are frequently categorised under the overarching concept of P-E fit (Judge & Ferris, 1992). Although studies of P-E fit are prevalent in the literature the focus is on fitting single levels of the environment to the individual, resulting in one-dimensional descriptions (Jansen & Kristof-Brown, 1998:F1). The current movement towards a multidimensional approach to P-E fit studies heightens awareness that a number of within-level, cross-level and temporal factors contribute to a more holistic perception of P-E fit (Jansen & Kristof-Brown, 1998:F3-F5).

As mentioned earlier, the concept of P-E fit is grounded in the interactionist theory of behaviour, assuming that neither “personal characteristics nor situational context explain the variance in behavioural and attitudinal variables but can be explained by the interaction between the personal and situational variables” (Sekiguchi, 2004:180). P-E fit conveys the idea that for “optimal occupational performance employee characteristics must be congruent with the characteristics of the work environment” (Bergh & Theron, 2001:316) and that the degree of congruence will determine the satisfaction of both the employee and the employer. Sekiguchi (2004) further explains the multidimensional nature of P-E fit as (a) “*supplementary vs. complementary*”, (b) “*needs-supplies vs. demands-abilities*” and (c) the “*perceived vs. actual distinction*” (Sekiguchi, 2004:180-181) (see graphical presentation in Figure 2.17).

Figure 2.17: Conceptualisation of the multidimensional nature of P-E fit

(adapted from Sekiguchi, 2004:181)



Sekiguchi defines "actual or **objective fit as the comparison between separately rated person and environmental characteristics**" (Sekiguchi, 2004:181), which is particularly relevant for this study in terms of the fit of the PPAs and HJAs. Jansen and Kristof (1998) are of the opinion that a great deal of knowledge regarding fit with various levels of the environment is available, but little is known about the dynamic interaction between these levels that creates the person's overall experience of fit or misfit (Jansen & Kristof, 1998:F1). In an attempt to take a more holistic approach, they propose a multilevel model of perceived P-E fit. Although their model includes pre-recruitment, requirement, selection/job choice, socialisation and long-term tenure as temporal stages in the employees' working relationship with organisations (Jansen & Kristof, 1998:F5), the absence of stages such as development stages including staff training, staff development and the design of learning environments to suit *learner's* (incumbent's) profiles, are notable omissions. Fit assessments operating at multiple levels of the environment should also include a temporal stage (for example development) that caters for fast changing work environments, and the training and development needs of the individual in coping with the changing work environment.

2.6.6.2.1 Person-job fit defined

P-J fit seen as a separate dimension of P-E fit refers to a match between a person and the job. This is usually based on the competencies and attributes of the person and the demands of the job and deals with two relationships: firstly, person skills and attributes to meet the job demands, and secondly, whether the job meets the needs of the person (Sekiguchi, 2004:179). The e-learning practitioner “job” at TUT has different environmental scenarios and P-J fit may thus imply a variety of relationships in different contexts influenced by different situational features.

Increasingly more sophisticated measuring instruments are being used to determine the match between the person and the job (Sekiguchi, 2004:183), and these applications are most relevant in the employee selection process. Operationalisations of P-J fit typically “include needs-supplies and demands-abilities perspectives” (Edwards, 1991 in Sekiguchi, 2004:184), which implies components such as “desires and motivational aspects of the individual and characteristics and attributes of the job” (Sekiguchi, 2004:184). Kristof (1996, in Sekiguchi, 2004:180-181) is of opinion that demand-supply fit and needs-supply fit are two contrasting constructs, viewing demand-supply fit as the individual’s capacity to provide what is necessary for successful completion of the job vs. needs-supply fit that equates the attributes of the job with the individual’s needs. Elements of both of these perspectives capture the essence of the P-J fit conceptualisation for this study. On the one hand, a combination of the individual’s needs and his/her capacity to satisfy job demands is characterised by the person’s work behavioural styles and, on the other hand, a combination of job demands and attributes are characterised by the job structure. P-J fit reflects the interaction and relationship between the work behavioural style of the individual and the job structure.

Implication for this study

The most important key issue in person-environment fit is in determining the relevant ‘P’ and ‘E’ characteristics for that particular environment or situation (Shin, 2004:735)

The following assumptions from P-E fit and P-J fit are important for this study:

- The greater the congruence between the personal characteristics of the e-learning practitioner and the job requirements, the greater the likelihood of success and of positive outcomes for the e-learning practitioners.
- P-E fit assumes an environmental context for the fit, therefore the TUT e-learning environment is relevant in terms contextualisation of the study.
- Personal and job characteristics form a triad with the environment, resulting in interactional relationships.

- Understanding the structure of the e-learning practitioner construct will depend on identifying the person characteristics of the e-learning practitioner and measuring their congruence with the e-learning practice attributes to determine goodness of fit.
- Because of the stability and visibility of personality over time, assessment based on personality should not change dramatically over time and therefore person attributes expressed as work behavioural styles would be useful, observable entities for this study.
- A holistic “quantum thinking” approach may enable the researcher to integrate and fit e-learning practitioner characteristics, the characteristics of the e-learning practice and the e-learning environment, resulting in a deeper understanding of the e-learning practitioner construct.
- Complementary fit divided into demands-abilities fit and needs-supplies fit is achieved when the person characteristics of the e-learning practitioner and the job characteristics of e-learning practices match in a complimentary fit.
- Misfits may lead the person to become more self-aware, may provide opportunity for self-development or may prove to be a good match in a different situation.
- Operationalisation of P-J fit includes the measurement of the characteristics of the e-learning practitioner and the job requirements using valid and reliable measuring instruments such as the Personal Profile Analysis and Human Job Analysis instruments from the Thomas International system.

2.6.6.3 Person-job fit research

General research initiatives pertaining to P-J fit traditionally focused on employee selection practices (Sümer, Sümer & Demirutku, 2001; Lievens, Van Dam & Anderson, 2002; Jenkins & Griffith, 2004) and researchers demonstrated the validity of structured selection techniques and the valuable contribution of P-J fit applications in selection and recruitment practices (Ruijter, 2005). Much of the current selection research focuses on the role of personality as a predictor of employee effectiveness and identifies agreeableness and conscientiousness as important predictors of performance (Wright & Boswell, 2002).

Research evidence shows a number of outcomes, for example job satisfaction, adjustment and organisational commitment, to be positively affected by a high level of P-J fit (Sekiguchi, 2004:183). Some researchers have examined the simultaneous impact of P-O fit and P-J fit types on different outcomes and found that these fit types have “independent effects on job satisfaction, commitment and intentions to quit”, stress and turnover (Sekiguchi, 2004:185). Sekiguchi states that, with the exception of Kristof-Brown’s (2000) study, little empirical research has investigated the simultaneous effects of P-O fit and P-J fit in the employee selection context (Sekiguchi, 2004:188).

Some researchers argue that P-J fit based on job analysis is founded on outdated ideas about jobs (Carson & Stewart, 1996). These arguments are based on assumptions about the changing nature of jobs, the existence of learning organisations, organisational flexibility, the technological innovation cycle and the adoption curve. However, selection practices should never use personality or person attribute assessment in isolation. Results of measurements should be viewed as one contribution to a holistic picture of the incumbent. South African law in terms of the Employment Equity Bill Notice 1840 of 1997, page 23, prohibits unfair discriminatory practices and regulates that no person may unfairly discriminate against an employee. Modern P-J fit applications in industry and in the business world use P-J fit techniques increasingly to enhance worker placement for training and selection of employees. The HJA – PPA assessment combination from Thomas International is an example of such a technique, focusing on person attributes and not on specific job tasks. Shelton *et al.* (2002) highlight the organisational leadership dilemma and challenge to simultaneously optimise behavioural style, P-J fit and cultural cohesion in an attempt to maximise effectiveness in organisations. They suggest a “quantum thinking” approach that may enable leaders to integrate the three organisational success factors – style diversity, P-J fit and cultural cohesion.

Using “right brain functions to explore organizational paradoxes” may result in surprising realisations, for example opposite organisational objectives can coexist (Shelton *et al.*, 2002). Sharing the same vision, mission and values does not mean everyone should act or think the same:

Quantum leaders use an inspirational purpose and timeless values to create strong, cohesive organizational cultures that transcend diversity.

Quantum leaders deploy innovative organizational development processes that enable other members of the organization to make a similar quantum leap. Working together they discover shared values and a shared purpose that transcend their differences and in so doing, they create quantum organizations where behavioural style diversity, job/person fit and cultural cohesion simultaneously co-exist (Shelton *et al.*, 2002).

This implies that leaders/workers and the work environment will contribute to the “speed, pace, pattern and endurance of work performance” (Bergh & Theron, 2001:482) and if the ongoing process of adapting to each another can be maintained, the four main ingredients for work adjustment, namely correspondence, satisfaction, satisfactoriness and job tenure, will be present (Bergh & Theron, 2001).

As Sekiguchi points out, despite the vast amount of P-E fit studies, there are still several research questions yet to be explored and he refers to issues relevant to the international and cross-cultural perspectives and the dynamic process of promoting P-E fit as possibilities for future research (Sekiguchi, 2003:190).

2.6.6.4 Person-organisation fit for virtual organisations

Among existing models of P-O fit, Shin's (2004) is particularly useful in helping to clarify the inherent complexities in conceptualising P-O fit for virtual organisations (see Appendix B4 for a detailed discussion on person-organisation fit issues and research). As discussed in preceding sections, the world of work for the e-learning practitioner includes the virtual teaching and learning work environment, which may also be part of a virtual organisation. Shin (2004) points out that recent studies have started to pay attention to human resource aspects of virtual organisations but have not focused on the "individual characteristics necessary for employees to be effective" Shin (2004:725). Findings from studies pertaining to virtual organisations report contradictory results in terms of job performance, productivity and satisfaction, whilst other report that the workers in the virtual organisation have feelings of isolation and dissatisfaction (Shin, 2004:727-728). Virtual work environments are not appropriate for everyone and it would be to the advantage of organisations to "determine the characteristics of virtual employees that would allow for a good fit to virtual organisations" (Shin, 2004:726).

Characteristics of virtual organisations are that they "possess internal structures of virtual teams and members" who are "located remotely" from each other, a flat structure as opposed to the steep hierarchy of traditional organisations and display dimensions of "space, time, culture and boundary" (Shin, 2004:726). "The degree of virtuality will depend on the extent to which an organisation takes on more of these four characteristics" (Kraut, Steinfield, Chain, Butler & Hoag, 1999, in Shin, 2004:727). Shin (2004:730) illustrates this with the following example. If employees work in a virtual organisation with an extreme degree of spatial and temporal dispersion, they would work remotely from one another without fixed time frames. A flat organisational structure would further imply that workers are not supervised very closely by their managers and that they would be able to work autonomously in a self-directed and self-motivated way. Thus, individuals who value autonomy highly will experience greater P-O fit in virtual organisations with a high degree of spatial and temporal dispersion than in virtual organisations with a low degree of spatial and temporal dispersion Shin (2004:730). Therefore in organisations low on virtuality, autonomy may become less important for P-O fit.

Shin (2004) proposes a P-O fit model for virtual organisations, mapping person attributes valuable on organisational, social and individual levels to virtual environmental dimensions and types of P-E fit to contribute to outcomes such as job performance, job satisfaction,

organisational commitment and turnover intentions. It is posited that these attributes are “salient and pivotal in achieving fit in virtual organisations” (Shin, 2004:728). Individuals should value autonomy; flexibility and diversity highly to achieve P-O fit in virtual organisations.

Trustworthiness, willingness to trust, virtual communication and lateral skills are characteristics that employees need in order to be compatible with the virtual team group to achieve person-group (P-G) fit (Shin, 2004:728). Shin (2004) continues by saying that domain knowledge, computer literacy, ability to work autonomously and time management skills are important characteristics of the individual to match the virtual job for achieving a good fit. All three types, P-O , P-G, and P-J fit are moderated by the degree of virtuality of the organisation and Shin supports Kristof’s (1996) view that achieving a good fit should result in positive individual outcomes (Shin, 2004:729).

Shin (2004:737-738) points out that his proposed model for P-E fit for virtual organisations may be useful to P-E fit research in terms of four distinct theoretical implications namely, (1) taking account the different degrees of virtuality in P-E fit research; (2) attempting to examine P-O, P-G and P-J fit simultaneously; (3) delineating the simultaneous effect of different types of fit and their antecedents, and (4) specifying the moderating effect of organisational dispersion on the relationship of the three types of fit and individual outcomes.

Important for this study

Taking cognisance of degrees of virtuality is especially important for positioning e-learning at TUT. Understanding the e-learning practitioner construct clearly calls for recognising the importance of environmental and situational influences. The nature of these influences, characterised by varying degrees of virtuality, will become evident through discussions in subsequent chapters.

Although this study may address Shin’s (2004:738) call for further research on aspects such as “degrees of virtuality” and “the examination of employee qualities that are important for achieving a good fit”, it also contributes to the understanding of another dimension not noted by Shin’s model, namely that of environmental structuredness. The importance of degrees of structuredness in the virtual teaching and learning environment for P-J fit research will become evident through discussions in subsequent chapters.

Implications for this study

With respect to the third research question, P-J fit in terms of the DISC dimensions is important for this study to describe the relationship between the e-learning practitioner and e-learning practice in terms of goodness of fit at TUT.

Based on the explained concepts and research, the research objective and consequent subsidiary question are:

- To identify the latent structure of the e-learning practitioner construct in terms of fit between the e-learning practitioner and e-learning practice (**research question 3**):
- What is the relationship between the e-learning practitioner and e-learning practice in terms of goodness of fit at TUT?

The challenge for this study is therefore to try and uncover the characteristics of the e-learning practitioner as well as the characteristics of their e-learning practice and to identify relationships between the person and the job within the context of the e-learning environment in higher education. The resulting patterns of relationships may provide me with insight into the structure of the e-learning practitioner construct. To enable me to do so the literature study focused on **studying e-learning practice** to get insight into the job of the e-learning practitioner (**research question 2**) and on studying the **e-learning practitioner** to get insight into the characteristics of the person doing this job (**research question 1**) and concluded with a focus on the relationship between the person and the job in terms of **goodness of fit (research question 3)** within the **e-learning context** at TUT.

2.7 Theoretical integration of the study

In applying a **systems theory framework** to an integrated combination of **P-J fit** and **interactionist theories**, the researcher aims to create a theoretical foundation to position this study and to use as an approach to investigate the research problem and questions. The design of P-E fit theory, including P-O fit and P-J fit theories, allows for a generally applicable model useful in any organisational context (Shin, 2004:729). Whereas systems theory offers the potential to focus on different theories as being parts of a whole (Patton & McMahon, 1999:136) and also provides a basis for integration whereby the researcher can view the interaction between the e-learning practitioner and the e-learning job. Assumptions from traditional systems theory are that the world operates in much the same way as a machine and that parts within the structure function in cause-and-effect actions in such a way that outcomes are generated (Patton & McMahon, 1999:143). Newer thinking is more focused on the patterns of functioning, analogue reasoning and spontaneous change (Patton & McMahon, 1999:144) and, according to Patton and McMahon (1999:135), human systems are viewed as “purposive, ever-changing and evolving toward equilibrium”.

Various researchers, for example Capra (1982), Bateson (1979) and Ford (1987), contribute to a better understanding of the key concepts of systems theory. Related to Capra's work in quantum physics are the notions that all things are interconnected and that no object can be studied in isolation. Furthermore, Capra became aware of the limitations in language for describing experiences independent of our senses (Capra, 1982; Patton & McMahon, 1999:136-137).

The relevance of systems theory for this study becomes clear in the words of Senge (1990), who says that "systems thinking offers a language that can restructure how we think" and can therefore be useful in providing a discipline for "seeing structures that underlie complex situations" (Senge, 1990:69), and Patton and McMahon (1999:141), who say that "the wholes and relationships that can more readily foster an understanding of complexity" (Patton & McMahon, 1999:141).

Systems thinking was used to understand the e-learning practitioner construct as a living system within the context of the e-learning and P@W Programme environments in the TUT organisation. The e-learning practitioner system consists of two subsystems, namely the e-learning practitioner (person) and the e-learning practice (job) subsystems. The identification of the interaction styles and the movement of the influences within and between the systems (recursiveness) is an attempt to give a "snapshot" of the dynamic interaction between the person and the job within the context of the work environment.

Systems theory offers a framework for a qualitative approach to a problem that is traditionally more quantitative in nature. The systems-interactionist model assumes that an organisation functioning as a whole is formed to achieve objectives that cannot be achieved by individuals on their own. Likewise, individuals join an organisation to achieve objectives that would be difficult on their own (Bergh & Theron, 2001). The main premise is that individuals as self-systems can best be understood by first examining their functioning in the context of the wider and hierarchical systems that surround them (Bergh & Theron, 2001:476).

Using these theoretical viewpoints, the human system is viewed as a "complexity of interrelated subsystems", interacting with other living and non-living subsystems (Patton & McMahon, 1999:136). The human system tries to maintain a state of homeostasis and equilibrium through purposeful actions that are ever changing to support the system. The premise of this study, that **person attributes** being elements of **human personality as a living system interacts with the environment** and there is a **feedback loop between responses ("behaviour") and resulting stimuli from the environment**, aligns with Huitt's (2003) proposed model for human behaviour. The view of personality as a living system is also suggested by other authors, for

example Bergh and Theron (2001), in their description of work-related personality attributes and processes, as well as Ford's living systems framework, which emphasises that "human behaviour is a function of the interaction of the person and context", as described by Patton and McMahon (1999:139). More contemporary writers contribute to complexity theory by their assumptions that "human beings are complex adaptive systems and that traditional explanations limit our potential to understand human behaviour" (Patton & McMahon, 1999: 141).

As Capra (1996) pointed out in *The Web of Life*, one has to look at the pattern, the processes and the structure of the system to understand it. Personality seen as a living system has specific characteristics which are combined in different patterns of types. According to Berens (1999), humans are born with a tendency for particular behaviour patterns (a True-Self), but interaction with the environment results in the development of an "Adapted Self". The "Contextual Self" represents current behaviour (Berens, 1999) and depends on what the situation at the time requires. When trying to understand personality, all we have to judge a person by is outer behaviour and the patterns of interaction that are both contextual and innate, and which determine behaviour in the relationship with the job, organisation and fellow employees. Therefore an organisation's culture and environment provides input that will "determine the type of contact with the individual and also the kind of behaviour and process that can be expected" (Bergh & Theron, 2001:477).

In the work environment, the human job, as a subsystem of the organisation, is a living system with certain characteristics combined in different patterns of types. These characteristics will determine the type of interaction and relationships with the person practising the job. The practitioner as a subsystem of the organisation also has certain characteristics, combined in various patterns, related to each other as well as to the other systems in the organisation. Through a process of interaction, reacting to influences and drivers (motivators and demotivators) the two subsystems form a living system in the organisation. The interactions between the two subsystems (person attributes and the specific job) define certain types of relationships and a particular climate. This leads to certain behavioural outputs by the person, which in turn results in certain consequences for the person and the organisation. Bergh and Theron (2001) further reason that the consequences reveal the extent to which individual and organisational objectives, needs and expectations have been satisfied. It is crucial to be aware of what is happening in all the aspects of interaction between employees, organisation and environment, and what the outcomes of these interactions are. This understanding is most important for the planning and implementation of interventions at the right place and time. (Bergh & Theron, 2001). However, for this study the focus will be on the interaction between the patterns of person characteristics (e-learning practitioner) and the patterns of job characteristics

(e-learning practice), resulting in relationships (P-J fit) in the work context (unstructured and structured work environments). The planning of interventions will not be a study focus, but will be mentioned in the discussion on the practical implications for training and career development for the e-learning practitioner.

Various approaches to personality in the work context use different foci, and schools of thought include *inter alia* psychodynamic or psychoanalytic, behaviourist or learning, factor or trait, and occupation-orientated personality theories. The main premise of this study is that in the work environment individual personal attributes have no meaning outside the context and that human job characteristics come to life in their relationship with the individual person. (Parts have meaning only in reference to the whole which is greater than the sum of its parts.) This relationship has an emphasis on maintaining ongoing change through negative and positive feedback loops. When energy flow in the system becomes too complex it results in a positive feedback loop that causes reorganisation and resultant growth and development in the system (Patton & McMahon, 1999:146).

Patton and McMahon (1999) also point out that Vondracek and Fouad (1994), who were influenced by systems theory philosophy, propose a developmental-contextual approach to career development, suggesting that intervening at different levels of context can change the relevance of a particular variable. These ideas are relevant for this study in the sense that changes in the work context in terms of structuredness affects the personal profile needed for a good fit. Thus interventions in terms of more or less structuring of the environment for the e-learning practitioner may have a positive congruence result.

Bergh and Theron (2001:510-511) are of the opinion that in the work context employees' competencies and occupational adjustment are primarily based on the direct and moderating effects of personality variables. Furthermore, the scientific and optimal management and development of human resources in organisations depend on the ability to determine individual differences in employees' personality attributes and their congruence with organisational attributes. Organisational culture and organisational effectiveness are also dependent on the collective "personality profile" which employees attribute to the organisation" (Bergh & Theron, 2001). Both the personality and the job systems are driven to operate in certain ways: if we can understand the inherent operating principles (e.g. behavioural styles and human job requirements) and work with them, we can save energy (Berens, 1999). If, however, there is incongruence between the two systems and they are forced to work together, energy is wasted and stress and resistance are triggered. These operating principles, or attractors (Berens, 1999), attract certain processes within the system, and knowledge about these attractors is vital for understanding the system.

To gain knowledge about a vague ill-defined construct such as the e-learning practitioner construct in terms of personal attributes is a daunting task. However, if the field of attention is narrowed to focus on personal behavioural styles in a work environment as “operating principles for the system” it becomes more manageable. The Thomas International Profiling System provides measuring instruments for measuring personal behavioural styles and human job requirements.

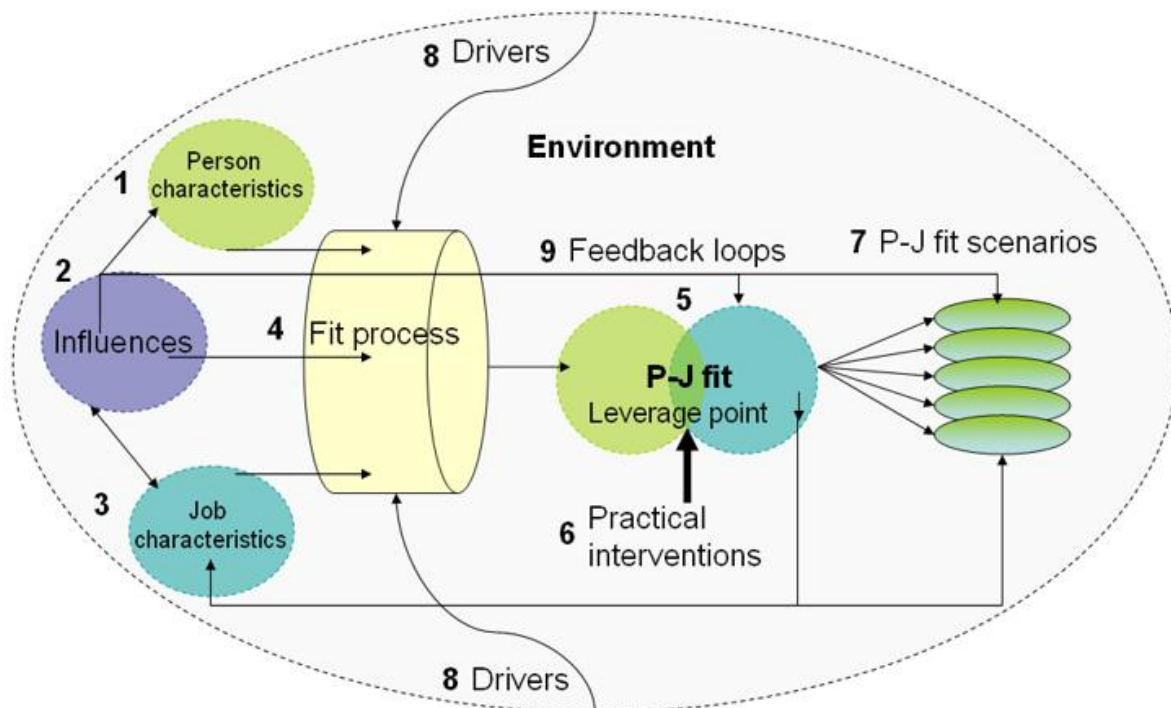
The Thomas Profiling System was founded by Dr Thomas Hendrickson in the early 1960s and has since gained widespread recognition as one of the most successful methods of determining human behavioural styles in the working environment. These are described in terms of four DISC factors, and different style types can be displayed as profile shapes. Best-fit type means that the themes and preferred processes of two types fit each other the best. A DISC test produces three distinct profile shapes: “the Internal, the External and the Summary”. These profiles “are based on analyses of different sets of answers, and each describes a different aspect of a person’s behaviour. Each profile shape will come to the fore in a certain type of situation” (Axiom n.d.). The Summary profile is a combination of the other two profiles describing a person's likely normal behaviour. The Internal profile, sometimes called the *Underlying* or *Pressure* profile, reflects the person’s true motivations and desires. This is the type of behaviour that often appears when an individual is placed under pressure. Also known as the *Mask* or *Work* style, the External shape usually represents the type of behaviour that an individual will typically adopt at work. The HJA as an integral part of Thomas International Systems is designed to specify the behavioural requirements of any job function in terms of the DISC structure (Dominance, Influence, Steadiness and Compliance). The match of the personal profiles to the requirements of the position can be obtained by means of a computerised fit between the PPA profiles and the HJA.

Various researchers describe personality as a living system and a number of different concepts are used to describe the personality system’s structure, for example “Cattell and Eysenck used traits as examples of structural concepts; Kelly referred to structure in terms of cognitive constructs and Roger utilised the self-concept of behaviour responses as an integrative structural concept” (Bergh & Theron, 2001:321). The researcher used work behavioural styles expressed in terms of DISC language to describe a particular aspect of work personality structure. A personality-orientated job analysis, namely the Human Job Analysis, was used to identify and describe job characteristics and job structure. Person characteristics from the individual (Figure 2.18#1) and characteristics from the job (Figure 2.18#3) are the inputs into the e-learning practitioner system, and through a process (Figure 2.18#4) of reciprocal interaction lead to certain outputs e.g. P-J fit (Figure 2.18#5), moderated by environmental influences (Figure 2.18#2) and constantly monitored by feedback systems (Figure 2.18#9). Environmental

changes act as drivers (Figure 2.18#8) in the system and practical interventions (Figure 2.18#6) such as the implementation of support programmes, job redesign and career development may be applied as leverage points to change the output for example to create a number of P-J fit scenarios (Figure 2.18#7).

The input-output is illustrated in Figure 2.18 in terms of a dynamic interactionist model of the e-learning practitioner system.

Figure 2.18: A dynamic interactionist model of the e-learning practitioner system



Questions about “knowing reality” and the underlying ontological and epistemological positions of systems theory hold that the only reality is the reality construed by the observer in interaction with the observed. This perspective is related to that of constructivism, “which explores multiperspectival data to gain richer knowledge from many perspectives” (Patton & McMahon, 1999:142). Within systems theory, validity is attained through interobserver reliability (Patton & McMahon, 1999).

This observer agreement needs an agreement in the language of expression, thus shared meaning is socially constructed. Through stories, individuals make meaning of their lives and actively construct their lives (Patton & McMahon, 1999:148). Bateson (1979), quoted in Patton and McMahon (1999:148), explains the concept of “story” in systems theory as “stories represent communications about patterns that connect all living things”. Therefore narrative approaches were used as a research tool to gain understanding of the work style behaviour of

the e-learning practitioner interacting with their world of work. Useful in this regard were the stories from the e-learning practitioners as reflected in their bloggers, Yahoo and face-to-face communications.

In an attempt to understand the structure of the e-learning practitioner construct, meaning was constructed by applying a matching process between self-knowledge and world-of-work knowledge, as perceived by e-learning practitioners within the context of the e-learning work environment. **P-J fit theory**, enriched by **interactionist theory** and guided by **principles of system theory**, provided a broad theoretical framework for this process. Relevant principles of systems, interactionist and P-J fit theory will be integrated in the following paragraphs.

2.7.1 Principles of systems theory relevant to this study

The following constructs will be described as key elements of systems theory: wholes and parts, abduction, open systems, environments, ongoing change, patterns and rules, structure, purpose, causality and recursiveness.

The study of systems focuses on the dynamics of the **whole system, which is greater than the sum of its parts** – instead of a reductionist analysis of the parts of the system (Senge, 1990:69). A system is an interactive unit consisting of two or more parts or objects. These objects can be described as input, process, output and feedback and the different attributes of these objects and their relationships are the focus of investigation. The relationship and arrangement between attributes are defined as patterns. Systems are not concretely visible but are organised **patterns of relationships** (Berens, 1999). Fritjof Capra (1996), in his book *The Web of Life*, wrote that to understand a living system you have to look at the pattern, the processes and the structure of the system.

I have come to believe that the key to a comprehensive theory of living systems lies in the synthesis of two approaches (Capra, 1996:154) to our understanding of nature that have been in competition throughout our scientific history – the study of pattern (or relationships, order, quality) and the study of structure (or constituents, matter, quantity) (Capra, 1997).

Berens (1999) adds “purpose” to the list and describes purpose as the holistic theme of the pattern. Pattern is the interrelationships within a system. Every system, including personality, is defined by essential characteristics. These are interrelated and the configuration of relationships is the pattern. Processes tell us the activities the system engages in and structure is how the pattern is physically expressed. Capra (1997) further states that the study of relationships and patterns in a system also involves the surrounding larger systems as well as its environment.

The context is the relationships between the system and its environment and “implies the idea of a web weaved together”... “to characterize systems thinking as a whole” (Capra, 1997). For the pattern of organisation to be visible, it needs to be embodied in a structure that, in living systems, is linked together by an ongoing process. “So system thinking means both contextual thinking and process thinking” (Capra, 1997). This manner of reasoning matches the key principles in P-J fit theory, namely that the process of fitting or matching the patterns of the person and job characteristics and how these interactions are expressed in a P-J fit structure.

Initial analysis of the parts and the relationships between the parts of a system is necessary to differentiate between the system under investigation and other systems. Systems thinking is less concerned with searching for the causes of human activity and reasoning by analogue replaces inductive and deductive reasoning. In contrast with inductive and deductive reasoning, which are both linear in their application, abductive reasoning involves processes of lateral thinking and is concerned with patterns and relationships. According to Kokinov (1994) a widespread (and broadly accepted) definition of analogy is that it is a mapping between elements of a source domain and a target domain. Gentner (1989:201) states that "analogy is a mapping of knowledge from one domain (the base) into another (the target) which conveys that a system of relations that hold among the base objects also holds among the target objects in Kokinov, 1994:3). **Abduction** or **abductive reasoning** is reasoning based on the principle of inference to the best explanation, that is, reasoning in which explanatory hypotheses are formed and evaluated (Thagard & Shelley, 1997). Abduction according to Peirce is about creating new rules – not checking which of the known ones might fit a situation! (Thagard & Shelley, 1997; Wikipedia, 2006b).

As described in previous paragraphs the e-learning practitioner construct is viewed as a system consisting of the e-learning practitioner and the e-learning practice subsystems. These systems are living systems functioning as **open systems** in the e-learning environment. Closed systems have rigid, impenetrable borders, whilst open systems can only be understood in relation to their environments, maintaining penetrable borders between themselves and their supra systems (Patton & McMahon, 1999). The description of **environment** is influential in the development of conceptual frameworks. Conceptualisations influenced by systems theorists such as Bronfenbrenner include the hierarchical organisation of environmental components, different levels of context and the “**nested arrangement of structures each contained within the next**” (Bronfenbrenner, 1977:514). The latter is particularly relevant for this study. The e-learning practitioner construct system, consisting of the two subsystems of e-learning practitioner and e-learning practice, is embedded in the e-learning environment (virtual organisation) at TUT, embedded in the domain of higher education, embedded in the South African environment as part of the global international context. Bergh and Theron (2001) agree that individuals as self-

systems in all their domains of behaviour (biological, cognitive, social and psychological) can be best understood by first examining their functioning in the *context* of the wider and hierarchical systems that surround them. Environmental drivers impact on the functioning of the system and are important influences on the system.

Systems theory emphasises **ongoing change** and makes the assumption that systems regulate themselves to maintain stability. It is the system itself that organises itself around some sort of operating principle driven to operate in certain ways (Berens, 1999). Berens further points out that knowing and understanding these operating principles and working with them saves energy but, by contrast, “if we try to force a system to behave in ways inconsistent with its nature, we spend energy and encounter resistance” (Berens, 1999). She refers to the operating principles (forces) as attractors, which attract certain movements or processes within the system. Understanding these attractors is the foundation of understanding the self of the self-organising system.

These key elements are also highlighted in the Living Systems Framework (LSF) proposed by Ford in 1987. Patton and McMahon (1999) describe this framework as a complex and comprehensive theory of human functioning and development that emphasises that change in the individual occurs to maintain stability and that human behaviour is a function of the interaction between the person and the context. Notions of causality and recursiveness are relevant in this regard. Plas (1986:62, quoted in Patton & McMahon 1999) uses the term *recursive* to describe nonlinearity as:

A recursive phenomenon is the product of multidirectional feedback, which occurs as functional and arbitrarily identifiable parts of a system emerge in transaction across time and space. A recursion is nonlinear; there is mutuality of influence. Any event that can be identified within a recursive human network can be viewed as the product of experience and anticipation. That is, any isolated movement or moment can be seen as influenced by events in the past, present and future (Plas, 1986:62, in Patton & McMahon, 1999).

Interaction between the e-learning practitioner and the e-learning job are influenced by a number of situational features. The focus of trait activation theory on person-situation interaction distinguishes this theory as an attractive and useful theoretical framework for studying situational features relevant to trait expression. Interactionist theory focuses on person-situation interaction on the premise that “trait activation is the process by which individuals express their traits when presented with trait-relevant situational cues” (Tett & Burnett, 2003:502).

Tett and Burnett (2003:500) propose a personality trait-based interactionist model of job performance that frames linkages between situational taxonomies (for example the RIASEC model) and the Big Five. Their aim is to contribute to a theoretical basis for personality trait-performance linkages and to “specify the conditions under which particular personality traits will predict performance in particular jobs” (Tett & Burnett, 2003:500). Application of interactionist theory in this study contributes to understanding the influence of situational features, such as job demands, distracters and releasers as positive and negative cues, on the activation of person attributes in e-learning practitioners, resulting in varying degrees of goodness of fit between the e-learning practitioner and the e-learning job. Practical interventions may change the leverage point to achieve positive or negative adaptations of the P-J fit.

The adoption of an integrated theoretical framework based on systems theory, P-J fit and interactionist theory described in previous sections can give coherence to this study by providing a comprehensive conceptualisation of the theories and concepts relevant to understanding the e-learning practitioner construct. The next section synthesises the literature review, linking together the theoretical framework and relevant conceptualisations into a conceptual framework for this study.

2.8 Conceptual framework

The conceptual framework is a consistent and comprehensive theoretical framework emerging from an inductive integration of previous literature, theories and other pertinent information. A conceptual framework is usually the basis for reframing the research questions and formulating hypotheses or making informal tentative predictions about the possible outcome of the study (Boston Glossary of Mixed Methods Terms/Concepts, 2003).

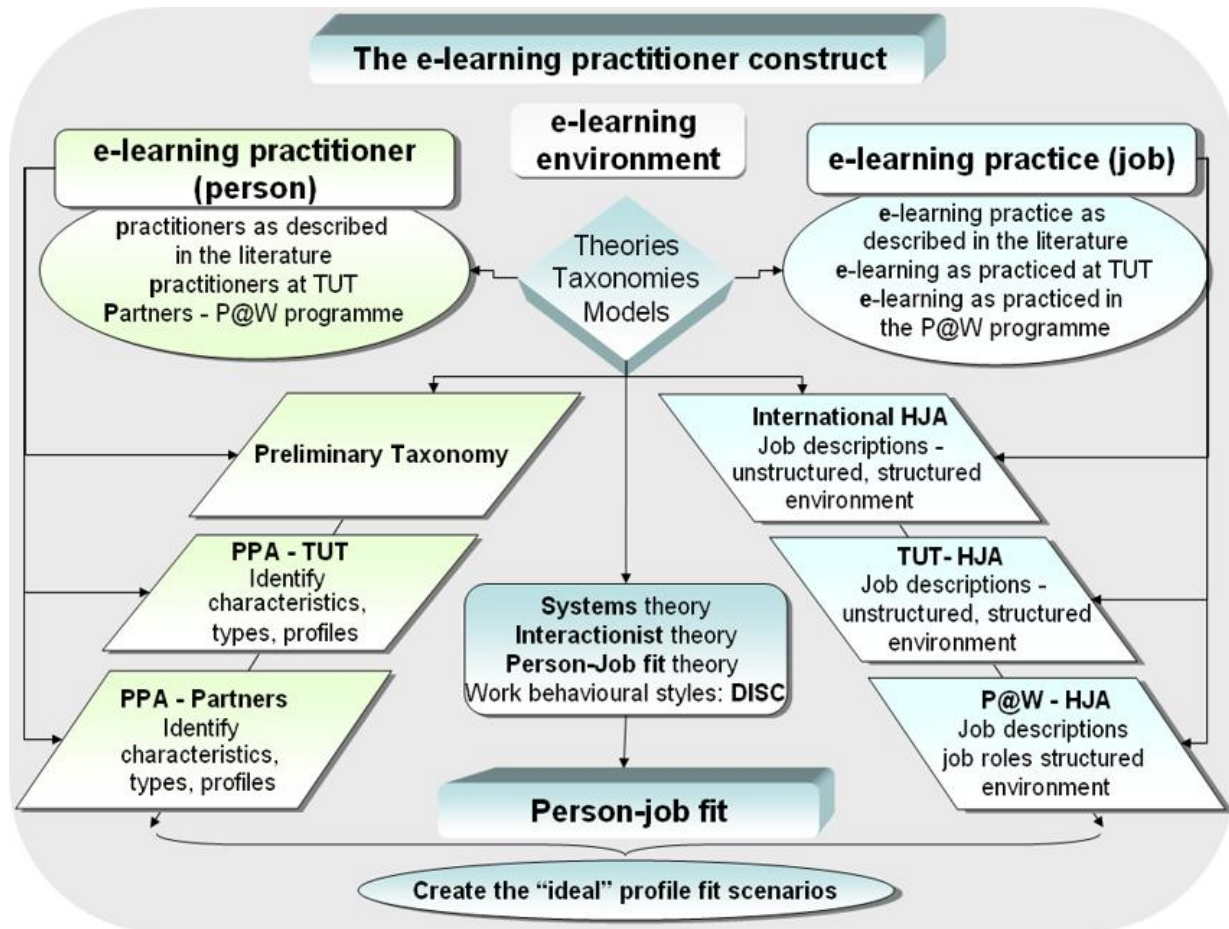
To investigate the structure of the e-learning practitioner construct, a number of structural concepts need to be positioned in a conceptual framework. The literature review in this chapter started with a critical analysis of the main concepts relevant to the construct under investigation. Conceptualisation of e-learning, e-learning practice and the e-learning practitioner, being the building blocks of the structure of the e-learning practitioner construct, attempts not only to clarify these concepts but also to deepen understanding of their interrelationships. Aspects such as the distinct characteristics of each of these main research concepts and the interplay of these characteristics establish the conceptual framework for this study.

P-J fit theory offers a general model for the measurement of P-J congruence applicable in a variety of contexts, therefore complying with the principles of usefulness and simplicity, and this was the reason for choosing this model. Strengthened and complimented by the principles of interactionist and systems theory, this model provided capacity for the building of a conceptual framework for this study. System theory principles offer a broad framework, in terms of input, process and output, for analysing the complex e-learning practitioner system, its constituent parts and the way in which they interact. Principles of interactionist theory enrich our understanding of these interactions by focusing on situational influences that impact on the process.

The systems thinking principle of "nested arrangement of structures, each contained within the next" is applied to the organisation of the e-learning environment in terms of international, organisational and programme environment levels. Characteristics of structured and unstructured e-learning environments on all three of these levels contextualise the systemic process of interaction. A graphical presentation (see Figure 2.19) is used to illustrate the relationship between these conceptualisations.

The DISC model will be applied to identify and describe person and job attributes from the two subsystems in the e-learning practitioner system. This model focuses on work behavioural styles and human job requirements as embodiments of person and job characteristics and offers an elegant classification scheme that partitions information about characteristics both of the person and the job, and defines the relationships among the pieces. For this reason I choose the DISC approach to classify, analyse and relate information pertaining to the characteristics of e-learning practitioners and e-learning practice. Operationalisation of these concepts by using the PPA, the HJA and P-J fit measures will be discussed in Chapter 3.

Figure 2.19: Conceptual framework



2.9 Summary

Chapter 2 reviewed literature dealing with e-learning, e-learning practice and the e-learning practitioner as building blocks for the structure of the e-learning practitioner construct. It investigated the literature on each of the research questions in this study and focused on studying **e-learning practice** to gain insight into the job of the e-learning practitioner (**research question 2**) and on studying the **e-learning practitioner** to gain insight into the characteristics of the person doing this job (**research question 1**). It concluded with the focus on the relationship between the person and the job in terms of **goodness of fit (research question 3)**. These topics were explored from various angles, including conceptualisations, issues and challenges in the respective fields, theoretical foundations and research initiatives, and policies and current trends in the research fields.

The theoretical basis for this study was presented and embraces P-J fit theory, enriched by integrationist theory within a systems theory framework. These theories were applied to the study to guide the research focus on the main research question: What is the latent structure of the e-learning practitioner construct?

The chapter ended by presenting the conceptual framework that guided this study. Operationalisation of the concepts presented in the conceptual framework, the research design and the methodology will be discussed in Chapter 3.